

Where
Careers
Begin

UW-Stout



1986-1987 UNDERGRADUATE BULLETIN

Undergraduate Bulletin



Catalog of Courses 1986-87

University of Wisconsin-Stout
Menomonie, Wisconsin 54751

Volume 65

**AN EQUAL OPPORTUNITY AND
AFFIRMATIVE ACTION UNIVERSITY**

North Central Association of Colleges and Secondary Schools
National Council for Accreditation of Teacher Education

For information concerning the University or any of its programs, write to: Director of High School Relations, University of Wisconsin-Stout, Menomonie, WI 54751. Telephone (715) 232-1232.

CONTENTS

3 GENERAL INFORMATION

- 4 Admissions
- 5 Special Programs
- 7 Financial Information
- 7 Housing Information
- 8 Scholastic Standards
- 9 Financial Aid
- 11 Student Services

13 PROGRAMS OF STUDY

13 INDUSTRY AND TECHNOLOGY

- 13 Applied Technology
- 17 General Business Administration
- 19 Industrial Technology
- 21 Marketing and Distributive Education
- 23 Technical Education
- 24 Technology Education
- 25 Vocational Education

26 HOME ECONOMICS

- 26 Child Development and Family Life
- 29 Clothing, Textiles and Design
- 30 Dietetics
- 32 Early Childhood Education
- 34 Fashion Merchandising
- 35 Food Service Administration
- 37 Home Economics in Business
- 39 Home Economics Education
- 41 Home Economics General
- 42 Hotel and Restaurant Management

44 LIBERAL STUDIES

- 44 Applied Mathematics
- 46 Art
- 50 Art Education

51 EDUCATION AND HUMAN SERVICES

- 51 Psychology
- 53 Vocational Rehabilitation

57 SPECIALIZATIONS

- 57 Craftsmanship
- 58 Inventing
- 59 Training and Human Resources Development
- 60 Futures Studies

61 MINORS AND CERTIFICATION PROGRAMS

- | | |
|-------------------------|---------------------|
| Aging Family | Mathematics |
| Art | Physical Education |
| Aviation/Aerospace | Physics |
| Biology | Property Management |
| Business Administration | Psychology |
| Chemistry | Sociology |
| Computer Science | Speech |
| Economics | Technical Writing |
| English | Tourism |
| Food Technology | Traffic Safety |
| History | Women's Studies |
| Journalism | |

63 COURSE DESCRIPTIONS

- 63 Industry and Technology
- 74 Home Economics
- 82 Liberal Studies
- 95 Education and Human Services
- 100 Learning Resources

101 FACULTY, ACADEMIC STAFF AND EMERITI

109 INDEX

GENERAL INFORMATION

TO NEW STUDENTS

At least part of the information you need in reaching your decision to attend Stout can be found on the following pages. The catalog places primary emphasis on the major programs offered by the University and descriptions of the courses within those programs. Fee, financial aid and housing information is also explained. Other students have found campus visits and discussions with staff members extremely helpful in reaching their decision. If possible, write or call for an appointment to visit the campus. The number is (715) 232-1232.

THE UNIVERSITY

Stout is one of 13 publicly supported universities in the University of Wisconsin System. It was founded as a private institution in 1893 by James H. Stout. A Menomonie industrialist and a man of great vision, he saw that students in America's developing industrial society needed a different kind of education, an education broader than that offered by the traditional curriculum. Since its founding, Stout has gained a position of national leadership in industrial, vocational, and home economics education. Its programs in those fields are among the largest in the world. Although Stout is a career-oriented university, it has had the foresight to make the humanities and social sciences key parts of the total educational program.

MISSION

As a basic step in the development of the newly merged University of Wisconsin System, in 1973, the Board of Regents adopted a broad mission for the System; a more specific one for the group of 11 institutions designated the University Cluster; an individual mission statement for each university. Within the UW System, Stout is a Special Mission University. As such, it has one of the most specific missions found in universities. It provides for service to Wisconsin through focused university wide programs in designated areas.

SPECIAL MISSION

The special character and purpose of Stout can be further delineated by the following statements of its particular goals and responsibilities:

- (a) The University should offer focused undergraduate institution wide programs relating to professional careers in industry, technology, home eco-

nomics, applied art, teacher education and the helping professions with the goal of meeting statewide needs for specialized curricula in these areas.

- (b) The University should offer selected basic graduate programs in its special mission areas.
- (c) The University should provide transdisciplinary programs which center upon the study of human development and interpersonal relationships, efficient practices of people in industry and education, and the relationship of individuals to technology, vocation and society.
- (d) The university programs will include a core of liberal arts to enhance, add meaning to, and provide a foundation for the specialties of this University rather than offer programs with majors in the traditional arts and sciences.
- (e) The University should experiment with new educational strategies and instructional technologies in the interest of improving the learning process.
- (f) The University should develop appropriate inter institutional relationships within the region and state and with the Wisconsin Vocational, Technical and Adult Education system.

THE FACULTY

On most campuses, expertise in teaching is no longer the concern only of the faculty and administration—students are equally concerned. Because Stout has specialized in certain areas, a staff comprised of individuals nationally recognized in their fields has been developed. All classes are taught by the faculty with the exception of several laboratory courses. The student-teacher ratio is about 20-1 overall. Of a staff of 450, a high percentage holds doctorates while others hold special degrees in their fields. One of the fine traditions at Stout has been the faculty's commitment to provide extra help to students.

FACILITIES

The University's instructional programs are supported by some of the most modern and well-equipped facilities to be found anywhere. To keep pace with growing enrollment and the increased needs of education, more than \$38 million in classroom, laboratory and library construction has been completed. The campus is adja-

cent to the central business district and Lake Menominee. The University's library is a completely integrated research collection of audiovisual software and print materials. A complete hard copy collection of ERIC is available and is complemented by computerized on-line search capability. Outstanding specialized collections in guidance, industrial education, home economics, vocational rehabilitation, vocational education, and hotel and restaurant management are featured.

STUDENTS

In terms of enrollment, Stout is not a local or state school. Its 7,300 students come from 30 or more states in the nation and 35 foreign countries. Students have a major voice in the affairs of the University and sit on important University committees. Besides regular and informal meetings with students, the University's Chancellor has "an open door policy." More than \$250,000 in student activity funds are administered by student government. There are more than 100 student clubs and organizations on campus, including national fraternities and sororities.

THE COMMUNITY

For many reasons, students like Menomonie and the surrounding area. Lakes, rivers and hills enhance the countryside. The area is in the heart of Wisconsin's vacationland with every winter and summer sport near at hand. Major entertainment and cultural attractions are available on campus and in nearby (60 miles) Minneapolis-St. Paul. Menomonie's population is 13,000.

ADMISSIONS

Application for admission forms may be obtained by writing the Director of Admissions at Stout or from any Wisconsin or Minnesota high school guidance office. Although there are general guidelines, each applicant is considered on an individual basis.

UW SYSTEM ADMISSION POLICY

Freshman applicants must satisfy the following minimum requirements to be considered for admission:

1. Graduation from a recognized high school or equivalent.
 - (A) A recognized high school is one which either, (1) is accredited by a regional accrediting association or state university or, (2) is recognized or accredited by a state department of public instruction or its equivalent.
 - (B) An applicant who has not graduated from a recognized high school must provide evidence of satisfactory completion of the requirements for a high school equivalency certificate or a diploma from a recognized high school, school system or state department of public instruction based on the General Education Diploma (GED) examination, the Wisconsin high school equivalency examination or other established criteria.
2. A minimum of nine high school credits from the following fields: English, speech, foreign language, natural science, social science, mathematics. (A high school credit represents a norm of five class periods per week in one field of study for a school year of 36 weeks.) Students admitted on the basis of an equivalency certificate or diploma or GED examination shall be considered to have fulfilled these minimum requirements. Some high school courses may not satisfy college admissions requirements for academic course work. To be certain that your high school work will meet college admissions requirements, check with the Admissions office at the university you plan to attend.
3. Evidence that the applicant is prepared to do satisfactory work.
 - (A) Normally this evidence will consist of the student's rank in class.
 - (B) Any unit may require test scores of all or some applicants as additional evidence but they may not deny admission to any student based on test scores alone.
 - (C) Students lacking rank-in-class or test score qualifications may be

considered if, on the basis of other factors, they appear to have a reasonable probability of success. Particular consideration in admission will be given to applicants who have been out of school for two or more years, service veterans with at least 180 days of active duty and to students who have been disadvantaged as a result of substandard education, family income level or ethnic background.

4. Applicants who do not qualify according to the above requirements may appeal for special consideration through the Director of Admissions.
5. Requirements for out-of-state students will be the same as those for resident students except that a unit may adopt special requirements for foreign applicants. If the number of qualified out-of-state students exceeds the ability of the unit to accommodate them, the unit shall determine the criteria for selection from among qualified applicants.

FALSIFICATION OF RECORDS

Students are expected to provide the University with accurate information concerning their past, personal and educational history. The University policy indicates that any students who intentionally falsifies or omits information given as part of his University record, becomes subject to automatic suspension.

NEW FRESHMEN

High school students should apply for admission early in their senior year. Applications are accepted by the University as early as Oct. 1. There is no deadline for applications. However, because of enrollment limitations, a student who applies early may gain some advantage in admissions and in securing housing and financial aid. High school graduates who rank in the upper three-fourths of their class are admitted in good standing. High school graduates who rank in the lower one-quarter and have an ACT Standard Composite score of 17 or more also are admitted in good standing. (SAT or CQT may be substituted for ACT.) High school graduates who do not meet those requirements may be considered for admission and are encouraged to carry a lighter load and participate in special programs provided for them. The Director of Admissions has the authority to accept any person who is not a high school graduate if factors indicate an ability to profit from a university education.

Deferred Admission Students who desire to work for a few years or enter military

service may process an application for admission now to gain contact with Stout in the event an opportunity for part-time study arises elsewhere. This will enable the student to check on the transferability of course work and at the same time, keep posted on pertinent changes at Stout.

SENIOR CITIZENS

Wisconsin citizens aged 62 and over may audit all classes at Stout free of charge if space is available. Others who do not wish to receive credit for courses taken may also audit courses by paying half of the normal fee.

TRANSFER STUDENTS

Transfer students should apply for admission and forward an official transcript early in the last semester at their present college. Tentative admission can be given after a preliminary evaluation of transfer credits. An early application for admission offers the opportunity for pre-registration for classes and financial aid clearance. Enrollment limitations may result in nonacceptance. Therefore, early planning and applications are important.

Two-Year UW Centers and Accredited Colleges and Universities Normally, students with an overall "C" average at their previous institution(s) can be admitted. Students with less than a "C" average can be admitted under certain circumstances, but should consult with the Director of Admissions for an evaluation. The University of Wisconsin System policy allows a maximum of 72-semester credits to transfer from two-year centers.

UW CENTER SYSTEM TRANSFERS

A booklet designed to assist UW Center System students who are interested in transferring into one of Stout's specialized programs is now available through Center System's counselors or Stout's Admission office. The booklet matches courses offered by the Center System with the individualized requirements of Stout's programs. By following program plans in the booklet, students can earn credits at any Center System campus and be certain those credits meet specific program requirements at Stout. The booklet is the result of a cooperative effort by Stout and Center System officials to compare courses offered by the Center System with requirements at Stout. Usually, students can take at least one year of study at a Center System campus—in some cases two—before transferring to Stout.

VOCATIONAL, TECHNICAL AND ADULT EDUCATION INSTITUTES

College Parallel Program Credits for the first two years of college work satisfactorily completed in college parallel programs will normally be accepted at Stout. (In Wisconsin, these are VTAE programs at Madison, Milwaukee and Rhinelander.) Generally, a student may transfer up to one-half the credits required for a degree at Stout, but not more than 72. A student transferring to Stout is expected to complete all program requirements.

Non-College Parallel Program Stout will accept selected credits outside the college parallel program as long as a direct linkage can be shown between those courses and the student's program area of study at Stout. General education or liberal arts courses taken outside the college parallel program will not usually transfer. However, the student will be given every opportunity to earn credit by examination in those areas. A student transferring from a non-parallel program must complete an application for admission and forward official transcripts from the last institution attended.

ADULT SPECIAL STUDENTS OR VETERANS

Adults may be admitted even though they have not completed high school if scholas-

tic ability is indicated through tests and interviews conducted by the University. Those who expect to enter as adult special students should arrange for an interview with the Director of Admissions well in advance of the desired entrance date. There is a special Veteran's office affiliated with the Registrar's office to assist the entering veteran.

INTERNATIONAL STUDENTS

It is recommended that all potential international students have better than average academic records.

At the Freshman Level (first year) Students must send documentation consisting of certified copies of certificates, diplomas or degrees earned. These official records must be equal to U.S. high school (secondary education) graduation for consideration.

At the Transfer Level Post-secondary records must be certified correct by the former institution attended. All certified records must show courses taken and grades earned. No advance credit will be given unless the record shows evidence of satisfactory completion of the course being considered. Any alterations or irregularities in these records will result in the student being denied admission.

Initial transfer of credits is provisional and must be validated by satisfactory work in residence.

Additional records presented after the student has enrolled will not be considered for transfer.

English Language Requirement The Test of English as a Foreign Language (TOEFL) is required of students from all non-English speaking countries. The minimum score required is 500. For information on where and when to take the TOEFL, write to:

Test of English as a Foreign
Language
Box 899
Princeton, New Jersey, USA 08540

Finances All international students must show evidence that they have adequate finances to undertake a degree program at Stout. As a condition of admission, international students whose sponsors have a history of delinquency in payment of fees, must place on deposit an amount approximately equal to the institution's non-resident tuition and fees for a 12-month period, which includes two semesters and an eight-week summer term. Applicants to whom this applies will be informed upon receipt of application. Questions about this policy may be addressed to the Business office or to the Office of International Programs.

SPECIAL PROGRAMS

Stout offers students opportunities to earn credits outside the classroom as well as in. Certain programs allow students to earn credit by examination. Field Experience and Independent Study should be investigated by students for the purpose of earning credit. These special programs and others are outlined below.

COOPERATIVE EDUCATION PROGRAM

Cooperative Education is an option within the curriculum at Stout. Currently, students in a variety of degree programs in the School of Industry and Technology, Home Economics, and Liberal Studies may be eligible to enroll. Students with degree programs CO-OP is a business/industry experience related to a student's academic program differing from field experience and internship as follows: (1) Alternating or parallel periods of classroom study and employment are possible, (2) A formal agreement is developed cooperatively by the instructor, student and employer, (3) Site experience is supervised, evaluated and paid, (4) CO-OP entails recurring (more than one) work/study peri-

ods, each one building and expanding on the previous, (5) A more intensive involvement with business/industry is cultivated: CO-OP is a "partnership" among the school, student and employer. Information on CO-OP and the availability of CO-OP job sites can be obtained from the Office of Cooperative Education or the Assistant/Associate Dean's office housing the degree program.

BUSINESS AND INDUSTRY INTERNSHIPS

Business and industry internships are available through the School which provides the major. Some internships are of the summer type and only three months, while others are at least six-months long. The minimum requirements are usually stated as junior or senior standing, candidates are company screened and the position is para-professional. Contact any School Dean's office for details about the program in that School.

FIELD EXPERIENCE PROGRAM

Students are encouraged to obtain part of their college education off the Menomonie campus through the Field Experience program. This program allows students to receive academic credit for learning related to their major or minor, while employed in an approved off-campus field position. Most students use their summers to enroll in this program, but part-time work is usually permissible. Field experience information can be obtained from the Dean's office in which the student's major is housed.

INDUSTRIAL WORK EXPERIENCE

A maximum of 24-semester hours of technical credit may be earned through examination by those students who have completed three years of skilled occupational experiences beyond the learning level of a trade. Students with less than this amount (seven years) of experience may request examination in specific technical courses upon presentation of evidence of appro-

appropriate work experience in that area. Students desiring credit for skilled occupational experiences should present evidence of the required amount of work to the program director of Vocational Education (Trade and Industry) shortly after registration to allow special program consideration.

INDEPENDENT STUDIES PROGRAM

Students at Stout may design a limited number of special topic courses for credit through the University's independent study program. This program is open to students during any enrollment or course-add period. Students may initiate the process by obtaining an application for independent study from the office of the assistant dean of the school in which this independent study is to be offered. The student then completes the form by identifying the course objectives, methods and evaluation process to be used and submits this to an independent study coordinator for further processing for approval. Credits are awarded on the basis of expending a minimum of 48 hours of effort for each credit and an evaluation of the extent to which the stated objectives were met. Independent study topics are ordinarily those not offered through existing courses. Approved independent study courses are completed by the student in consultation with the assigned independent study coordinator who provides counsel and aid to the student in achieving the approved desired learning objectives.

Students should consult in advance with their program director to find out whether the proposed independent study may be used in the degree program.

TECHNICAL SERVICE SCHOOLS

Many manufacturers offer special purpose technical courses. Some of them may be suitable for college credit. See the course description for details.

THE AMERICAN COLLEGE IN LONDON

A semester at the American College in London provides supplemental learning experiences to students enrolled in the fashion merchandising and clothing, textiles and design programs. This four-year college offers an opportunity to live where there are long traditions related to textile, apparel design and merchandising. One of the major retailing centers in the world, London provides opportunity for the study of a variety of businesses and exposure to other cultures.

CREDIT BY EXAMINATION

Stout has several procedures which permit students to demonstrate their competence through externally and internally developed examinations. External examinations include the College Level Examination Program (CLEP) and the Advanced Placement program (AP). For further information or external examinations, ask at the University Counseling Center. Internal credit by examination is possible by "Test Out" procedures developed by various Stout departments. For further information on internal examinations, ask at the appropriate School or department office. Student testing out of a course by external or internal examinations will be charged a testing fee.

CONTINUING EDUCATION

Stout has a tradition of providing educational opportunities on a local, regional, and statewide basis as a commitment to the concept of life-long learning. The campus is involved in several areas of non-traditional higher education. These areas include both credit and non-credit activities as well as conferences and workshop experiences of a unique nature.

Stout's program in home economics, industrial technology, industrial arts and vocational rehabilitation are among the largest in the world. Off-campus courses are drawn from these strengths as well as family counseling, early childhood education and numerous other fields of study and interest.

The coordination of all off-campus activities is the responsibility of the Office of Continuing Education and Summer Session. Off-campus credit and non-credit opportunities include:

1. Off-campus courses offered in the rural local service area of Stout, as well as statewide, based on our special mission within the UW System with a particular focus on vocational-technical education.
2. Teleconference courses mediated via the use of telephone network coordinated by our campus.
3. Television courses via ETV Network.
4. Weekend workshops.
5. National and regional conferences.
6. Weekend college.

SUMMER SESSION

Stout conducts a 10-week summer session with classes varying in length from one week to eight weeks. Students may pre-register or register each Monday of the week their classes are scheduled to begin. It is possible to earn 10 credits during the 10 weeks of summer session. Graduate students are encouraged to contact the Graduate College early in the spring. The Summer Session Bulletin is available after March 1. A copy will be sent on request.

Pre-enrollment is encouraged in April and May.

PIGEON LAKE

The University of Wisconsin System sponsors summer programs at the Pigeon Lake Field Station near Drummond in Bayfield County of northwestern Wisconsin. Station offerings include undergraduate and graduate courses in field biology and in mapping, outdoor education, recreation, counseling and art. Class sessions vary from one to three weeks in length with some classes weekends only. Credit earned at the Station is accepted as residence credit at Stout. The Field Station is located in a natural outdoor laboratory among the lakes, streams and forests of relatively unspoiled portions of northern Wisconsin. For additional information, contact the Registrar at Stout or the Director of the Pigeon Lake Field Station, University of Wisconsin-River Falls.

THE GRADUATE COLLEGE

The Graduate College, a unit of the Division of Academic Affairs has the general responsibility for graduate education in the university, and administers graduate admissions, records, policies and other procedures relating to graduate students. Graduate programs are administered as follows: School of Industry and Technology - Master's programs in Industrial Education, Management Technology, Safety, Vocational Education, and Educational Specialist's program in Industrial and Vocational Education; School of Home Economics - Master's programs, in Clothing, Textiles and Related Art, Food Science and Nutrition, Home Economics Education, and Hospitality and Tourism; School of Education - Master's programs in Guidance and Counseling, Marriage and Family Therapy, Education, Education - School of Psychology, Vocational Rehabilitation, and Educational Specialist's program in Guidance and Counseling; Learning Resources - Master's program in Media Technology.

DUAL UNDERGRADUATE — GRADUATE ENROLLMENT

Undergraduate students in their last term of enrollment who are carrying 14 or less undergraduate credits may wish to initiate graduate study in one of Stout's graduate programs. Application for dual enrollment must be made to the Graduate office. Upon approval, initial enrollment in a graduate program may be done concurrently with the final enrollment for the undergraduate degree.

FINANCIAL INFORMATION

Since the catalog must be prepared far in advance, all fees, room and food rates, and other charges are subject to change without notice. Students are expected to pay all fees according to the procedure outlined in the Student Handbook. Failure to pay fees may result in suspension. Stout offers an opportunity to pay fees in installments. This program requires \$200 plus any past due amount or total payment at registration, whichever is less. The balance is due in two equal monthly installments. The fees on the following schedule incorporate the usual student costs such as textbook rental, Student Center, student activity and health fees. However, the schedule does not include lab or material fees charged in some courses.

SEMESTER COSTS

Undergraduate fees are set by the University of Wisconsin Board of Regents and are subject to change. Semester fees for undergraduate students registered for 12 or more credits are:

Resident:	\$ 608.35
Minnesota Resident:	722.35
Non-resident:	1849.35

MINNESOTA STUDENTS

Minnesota residents must submit a reciprocity application to Minnesota before the end of the intended semester. If approved for reciprocity, the student will be charged at the Minnesota resident tuition rate. Applications are available at the Financial Aid office and the Office of Student Business Services. The State of Minnesota has indicated that reciprocity benefits will not be granted "retroactively" and that "each student is responsible for the application process." Therefore, each student must complete and mail a correct, signed and notarized application prior to the last day of the semester.

SPECIAL INTEREST

Special interest students should inquire about the fee structure as it relates to them at the time of registration. Generally, a special interest student is an individual who does not expect to apply the earned credit toward a degree at Stout.

REFUND ON FEES

Withdrawal from semester courses generate refunds based on the following schedule: First week of classes, 100 percent; second week, 80 percent; third week, 60 percent; and fourth week, 40 percent. After the fourth week, there is no refund. Refunds for room and food service charges are based on the date of withdrawal.

UNPAID OBLIGATIONS

Failure to meet financial obligations is a serious matter. Therefore, unpaid obligations of any nature due and payable by a student to the University of Wisconsin-Stout constitute valid reason for suspension from the institution. Students will not be allowed to register or receive transcripts until delinquent accounts are brought up-to-date.

HOUSING INFORMATION

Residence hall living is a meaningful part of a student's life at Stout. With the help of a professionally trained staff, students achieve their goals through a variety of social, educational and recreational activities. The University provides residence hall accommodations for approximately 2,900 students.

Freshmen and sophomores (59 credits or less) are required to live in the residence halls as long as space is available. Exceptions are made for veterans, married students and students living with their parents.

Students may and are encouraged to apply for residence hall accommodations immediately after being accepted to the University. An application card for the residence halls accompanies the letter of acceptance sent to the student by the Admissions office.

Contracts for residence hall rooms are sent to the students in the order in which applications for rooms have been received. Normally, students applying for residence hall space prior to March can be accommodated for the next academic year. A \$75 surety deposit is required with each contract. This deposit is applied against the final payment for the second semester. Rooms may be occupied the day

prior to registration each semester. The contract is valid for the entire academic year.

Each room is furnished with two single beds and innerspring mattresses, dressers, study tables, chairs and bookcases. It is suggested that students not bring additional furniture. The rooms are approximately 11 feet by 15 feet. Radios, stereos and television sets are permitted in the rooms provided the students comply with the regulations for the use of this equipment. Television sets are also available for general use in the main lounge of each building. Small refrigerators are available on a rental basis.

Students living in residence halls are required to contract for their meals in the dining service facilities as provided. The meal contract plan provides various options. Cooking in student rooms is not permitted. Kitchenettes are available in each residence hall.

The Stout Student Association office attempts to maintain a list of off-campus housing currently available. These are available upon request. Those planning to reside off campus may find it useful to visit Menomonie to secure the type of housing desired.

SCHOLASTIC STANDARDS

SEMESTER CREDIT

Credit is expressed in semester hours. A credit of one semester hour represents the satisfactory completion of the work of one recitation a week for a period of one semester. A course having five recitations a week will therefore give five semester hours of credit. In order to receive a degree, the student not only must gain the required number of credits in the course being pursued, but also must attain a certain standard of scholarship.

CREDIT REGISTRATION AND OVERLOAD POLICY

Courses are designed and graduation requirements are established so that a normal semester credit load is 16 or 17 credits. Students should only pre-register or complete final registration for those classes they fully intend to complete. Students may not register for classes which conflict with other class(es).

Undergraduate students with the exception of graduating seniors will be restricted to 16 credits during pre-registration. Once pre-registration is completed, students may add credits up to a maximum of 20 during the final Registration Add/Drop period.

Students seeking a waiver of the 16- or 20- credit limit may appeal to their program director. If approved the signed overload permit must be filed in the Registration and Records office each semester.

The maximum credit load for summer school for undergraduate and graduate students is one credit per week during the session(s) for which the student is enrolled. Courses in which the number of credits equals the number of weeks the course is offered precludes enrollment for additional credits during that time. Requests for an exception in special circumstances should be transmitted to the appropriate program director.

ADD/DROP POLICY

Careful planning should lead to schedules for students which are sound individual programs. The majority of students should not have a need for adding or dropping once classes start. Occasionally, conditions exist which do not permit students to carry through their course plans.

The following policy serves as Stout's procedures for adding or dropping classes:

Students are expected to complete courses for which they register. Students who wish to adjust their class schedules may add or drop classes before the end of the second week of semester classes and before the end of the first week of quarter

classes. Drops made during the first two weeks of a semester course or the first week of a quarter course will not appear on a student's transcript. If students deem it necessary to reduce their program after the normal (two week) Add/Drop period, they should do so as early as possible. A mark of "WS" or "WU" is given by the instructor and recorded on the student transcript for a course dropped after the add-period of a semester or quarter course but before the midterm date. After the midterm date, any withdrawal from a course is recorded as an "F." If extenuating circumstances warrant other consideration, an appeal may be made to the instructor of the course. Students who register for a course but do not attend the class and do not officially withdraw are given a mark of "F." Students who do not attend the first class meeting of a course, or who do not notify the instructor or department chairperson that they will be absent for special reasons, may at the instructor's option, be dropped from the course if, and only if, other students are waiting to enroll at that time.

PROCEDURE FOR WITHDRAWAL

Withdrawal should be undertaken only after serious consideration. Persons intending to withdraw must schedule an exit interview at the Student Services office and complete a withdrawal form. A student who fails to withdraw officially from the University will receive a grade of "F" in all courses being pursued. Withdrawals after the midpoint of a term or course will generally result in "F" grades. (See grading policy in Student Handbook.)

GRADE POINT AND SYMBOLS

- A = 4 grade points
- B = 3 grade points
- C = 2 grade points
- D = 1 grade point
- O = Outstanding (no grade points)
- S = Satisfactory (no grade points)
- U = Unsatisfactory (no grade points)
- W = Withdrawal from school before midterm or grade assigned by registrar for improper drop
- I = Incomplete
- CR = Pass (no grade points)
- F = Fail
- IP = In Progress
- AU = Audit - no credit awarded
- NC = No Credit
- WS = Withdrawal - Satisfactory Work
- WU = Withdrawal - Unsatisfactory Work

SUSPENSION AND PROBATION

Grade point requirements for graduation vary by major selected. A lower grade point average than required by the major, although it may not result in probation or dismissal, cannot be construed as satisfactory progress toward a degree. Minimum acceptable standards for retention are defined as follows:

(1) First semester freshmen students will be placed on probation if they achieve a grade point average less than 1.7 at the end of the semester. They will be suspended if their grade point average is less than .75 at the end of the semester.

(2) Second semester freshmen will be placed on academic probation if their cumulative grade point average at the end of the second semester is less than 1.8. They will be suspended if their grade point average is less than 1.0 for the semester.

(3) First semester sophomores will be placed on academic probation if the student's cumulative grade point average at the end of the semester is less than 1.9; the student will be dismissed if the current grade point average is less than 1.0 for the semester.

(4) Second semester sophomores or an upper division student, will be placed on academic probation and may be dismissed at the end of any semester in which the student's cumulative grade point average is less than 2.0; the student will be dismissed at the end of any semester in which the current grade point average is less than 1.0.

A student who has been declared academically ineligible to continue may request a hearing to appeal.

Generally, individuals placed on probation will not be allowed to continue on probation more than two semesters and upper class students may be dismissed without probation notices.

REQUIREMENTS FOR GRADUATION

The semester credit hours required for graduation vary slightly with the major and are stated under the program of study for each major. The normal time required for the completion of these requirements is four years and results in the awarding of the bachelor of science or bachelor of arts degree. Meeting the requirements for graduation is a responsibility of the student. To fill the minimum residence requirement, the last 32-semester hours of credit (64 grade points) must be earned in residence at Stout. Candidates for degrees are required to file an Application for Degree card with the Records office one semester prior to graduation.

GRADUATION WITH HONORS

In each graduating class, the selection of students for honors is based upon scholarship. Upon completion of a student's undergraduate work, a minimum cumulative grade average of 3.200 in 60 or more credits must have been earned. The designations Cum Laude (3.2 - 3.499), Magna Cum Laude (3.5 - 3.799) and Summa Cum Laude (3.8 - 4.000) are used. For commencement purposes, the cumulative GPA earned at the end of the semester preceding the commencement ceremony will determine recognition at the commencement ceremony. However, honors will be officially determined at the time of final graduation checkout. A transfer student who has from 32 to 59.5 credits earned in residence will be considered for honors if the student's prior school(s) records met or exceeded the appropriate standard. Honors will be listed on the student's transcript and will appear on the diploma.

CHANCELLOR'S AWARD

Universities recognize many different kinds of achievement, all important parts of a total education. Since scholastic achievement is the basic purpose of higher education, academic excellence is acknowledged by the University through the Chancellor's Award. Students who receive a semester grade point average of 3.5 or above qualify for the award.

PROFESSIONAL TEACHER EDUCATION

The professional teacher education programs at Stout are administratively housed in the respective schools. Complete curriculum for specific teacher education programs are found elsewhere in this bulletin under Art Education, Early Childhood Education, Home Economics Education, Industrial Education, Marketing and Distributive Education, Special Education, and Vocational and Technical Education.

The officially designated coordinating unit for the various teacher education programs is the Teacher Education Council which is convened by the dean of the School of Education and Human Services and has appropriate representation from contributing programs. The Office of Teacher Education serves a facilitative function for the Teacher Education Council and exists to support department and programs preparing education personnel. This office serves as a resource center for students, faculty, program directors and administrators; maintains appropriate student records; and serves as a clearinghouse for the Teacher Education Council, accrediting agencies and public agencies.

Admission to Advanced Standing During the freshman year, each student enrolled in a teacher education program should begin fulfilling professional standards requirements. In addition to possessing expertise in a subject area, an effective teacher has fundamental skills and competencies needed in any teaching field. The professional standards are intended to ensure that teacher education students meet certain basic standards of the profession. All teacher education students enrolled at Stout must meet all of the following standards by the time they apply for admission to Advanced Standing in a Teacher Education Program prior to enrolling for the term which will result in their completing more than 60 cumulative credits. These standards must also be maintained throughout each program as a requirement for graduation.

1. Communications:

- (A) *College English* Teacher education students must have earned a grade of at least a "C" in both English 326-101 and 326-102 or 321-111 and 326-112.
- (B) *Speech Proficiency* Completion of the speech proficiency requirements, as evaluated in 391-100, Fundamentals of Speech. This requirement may also be met by successful completion of both the

written and oral portions of "The Speech Department Credit by Examination Procedure" for 391-100, or by successful completion of a second speech course selected from the following: 391-200, 391-206, 391-508, or 391-512.

2. Academic Standards:

Teacher education students must maintain a minimum grade point average of 2.5.

Admission to Student Teaching Admission to Advanced Standing in a Teacher Education Program does not assure admission to student teaching. Application should be made for admission to student teaching as outlined in the Teacher Education Student Handbook. Students with questions regarding their rights are advised to consult the Student Handbook.

TEACHER CERTIFICATION

Teacher education programs at Stout have been established to meet state teacher certification in Wisconsin. Programs will likely meet certification requirements in many, if not all other states. However, teacher certifications vary by state (may require state history, etc.) and requirements change periodically. Therefore, a student contemplating teaching in another state may wish to clarify the acceptance of the program at Stout by the state in which they plan to teach. Information concerning certification may be obtained from the Office of Teacher Education.

CREDIT REGISTRATION AND OVERLOAD POLICY

Courses are designed and graduation requirements are established so that a normal semester credit load is 16 or 17 credits. Students should only pre-register or complete final registration for those classes they fully intend to complete. Students may not register for classes which conflict with other class(es).

FINANCIAL AID

The primary purpose of financial aid is to provide assistance to financially needy students who, without such aid, would be unable to attend college.

The basic premise for all need based financial aid programs is that the primary responsibility for financing a student's education rests with the student and the student's family. The federal and state aid is intended to meet those educational costs which remain after the student's resources and a reasonable expected contribution from the student's parents have been

taken into account. To determine student need and award aid consistently and fairly, parents and students are required to fill out a financial statement listing their income, assets and liabilities. Stout prefers all applicants complete an ACT Family Financial Statement (FFS). Stout also accepts the CSS Financial Aid Form (FAF). On the basis of this financial statement, the financial aid officer can determine the need, which is the amount parents and students can be expected to contribute subtracted from the cost to attend Stout

for the year. Students are expected to contribute a portion of their assets as well as a standard expected savings (\$700 Freshman; \$900 Sophomore, Junior and Senior) from summer work.

Financial aid must be applied for annually. Financial assistance is awarded for the entire academic year. Each applicant is considered for all types of aid for which the applicant is eligible according to State and Federal regulation. Financial aid categories are grants, work or loans.

Financial Aid awards are based on full-time status, 12 credits or more. Students must consult with the Financial Aid office if planning to carry less than a full-time credit load as an adjustment will have to be made in the aid award.

Applicants are encouraged to submit financial statements by April 15 of each year. Applications received after that date are processed on a first come, first served basis. Applicants whose forms are in early

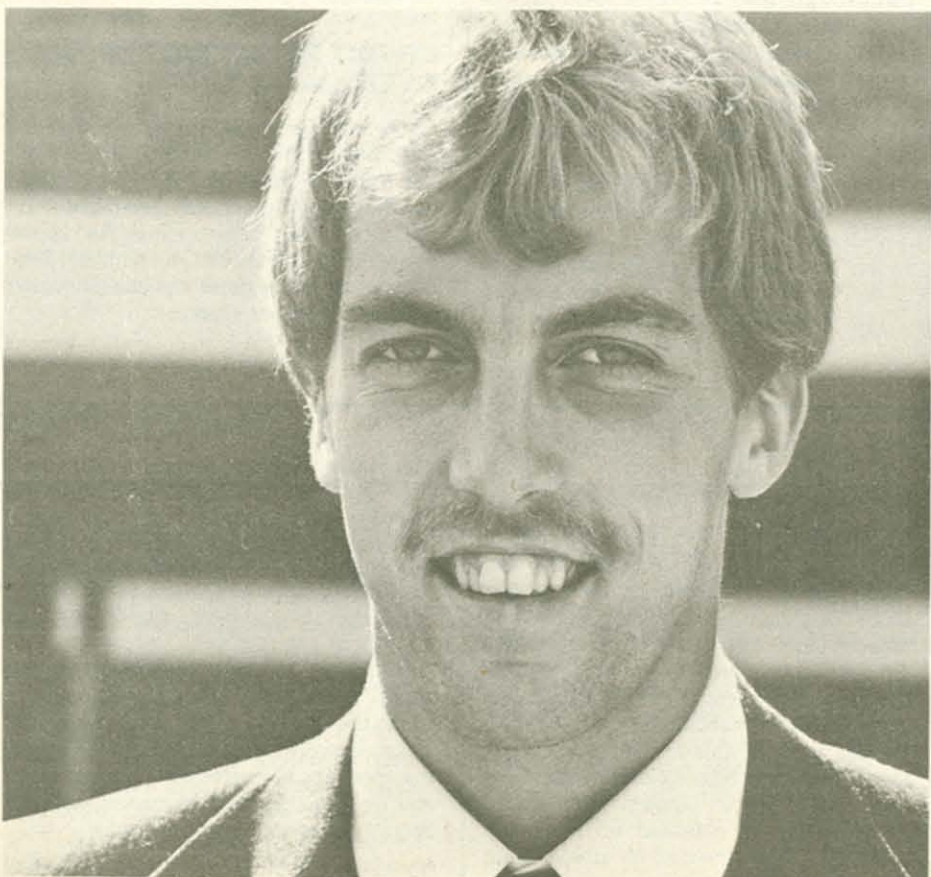
are notified whether or not they are eligible for financial aid between June 1 and June 30.

Financial Aid counselors are available for consultation. Stop at the Financial Aid office, 210 Bowman Hall, if planning to visit the campus. Please call (715) 232-1363 or write for an appointment. More comprehensive information on financial aid is available on request from the Financial Aid office.

*Stout prefers all applicants complete an ACT Family Financial Statement (FFS). Stout also accepts the CSS Financial Aid Form (FAF).

**Financial aid categories are grants, work or loans.

***More comprehensive information on financial aid is available on request from the Financial Aid office.



STUDENT SERVICES

Student Services has as its primary function the stimulation of student development in all phases of life. Student Services at Stout is concerned with maintenance/service oriented functions. Equally important are the educational and developmental functions which include tasks such as researching student needs; assisting students in assessing their own needs, potential, and development in their personal, academic and career areas; motivating students to develop a commitment to growth in all areas of life; and assisting students in the integration of formal and informal educational experiences.

STUDENT ACTIVITIES

More than 100 student organizations and activities are represented on campus. They share a common purpose in providing opportunities which will help meet the extra-curricular needs of students. Such diverse interests and organizations as band, dramatics, yearbook, newspaper, forensics, chorus, religion, politics, recreation, fraternities and sororities offer experiences which allow students to continually develop their interests. The University also has a complete recreation and intramural program for men and women.

STUDENT CENTER

The Memorial Student Center features lounges, snack bar, bowling, billiards, coffee house, bookstore and a recreation equipment rental center (camping equipment, canoes, bicycles, etc.).

NEW STUDENT ORIENTATION

A summer orientation and registration program provides new freshmen and their parents an opportunity to become better acquainted with the campus. During these scheduled one day visits, parents become involved in a variety of orientation activities while students are provided with important information about degree programs, career opportunities, and academic advisement in course selection. The students develop the fall semester class schedule. Transfer and reentry students are also invited to campus during the summer to receive advisement and develop a class schedule. During the first few days of the fall semester, new students receive additional help through planned activities.

PROJECT ASPIRE

Project ASPIRE is a federally funded program that provides support services to selected students. The project offers activities and programs to aid individuals in

achieving academic success. Individual assistance and tutoring programs in academic areas, along with educational and career development activities and services for students with disabilities (including learning disabilities) are offered. Special programs for those experiencing academic difficulty are also available. ASPIRE staff includes a Reading/Writing Specialist, Writing Specialist, Coordinator for Students with Disabilities, Tutor Coordinator, and Personal/Academic Advisers. Interested individuals should contact a member of the ASPIRE staff at Ext. 2995 or 2996. Project ASPIRE is located in Room 128, Bowman Hall.

COUNSELING CENTER

Counselors are available to each University student to assist in deriving the maximum benefit from the student's university career. Counseling provides a means to continue growth in self-understanding and in understanding others. Many decisions regarding educational, vocational or personal-social choices can more effectively be made with the help of a counselor. Counseling, psychological testing, and an extensive college catalog and vocational information library are available, and use of the Center is voluntary and free of charge to Stout students. The vast majority of users of the services of the Center are experiencing "normal" kinds of concerns. Most students in the course of their college experiences will encounter some problems with which they could benefit from the help of an experienced, understanding person. The Center's hours are 8 a.m. to 4:30 p.m., Monday through Friday and evening counseling can be arranged. The Career/Educational Information Resource Center and the Biofeedback Laboratory are open until 9:00 p.m., Monday through Thursday. Appointments to see a counselor may be made by calling Ext. 2468, or by directly contacting the Center.

VETERANS SERVICE

Special assistance is available to veterans by the Registration and Records office. This office provides veteran students with current information on veteran's affairs, coordinates special educational programs for veterans, and maintains liaison with the Veterans Administration, Department of Veterans Affairs, and the County Veterans Service Officers. All veterans receiving assistance must file the appropriate forms with this office.

PLACEMENT SERVICE

The University maintains a full-time Career Planning and Placement Service for all students and alumni. Staff members assist students in evaluating abilities and planning for the future. Placement of Stout graduates continues to be a major emphasis of the University. Three full-time Career Planning and Placement counselors are available. Career Days, campus recruitment, workshops and one-on-one counseling are just a few of the services. Statistical reports are available on the employment of past graduates.

ACADEMIC SKILLS CENTER

The Academic Skills Center is a service offered by Stout to any students interested in improving their reading, writing, spelling and study skills. A class Reading Improvement and Study Skills, is available; it is offered on a semester basis for two credits. In addition, individualized self-instruction materials are available in the areas of reading, reading rate, memory, comprehension, spelling and vocabulary. Spelling instruction is offered each quarter in small groups. Students may also come to ASC for individual academic advisement. Support services are available for learning disabled students. Phone inquiries may be made at Ext. 1381 or Ext. 1125.

In addition, the Center coordinates a volunteer tutoring program, offering help in most classes on campus. Persons interested in volunteering to tutor or requesting a tutor should stop in at the Center. For further tutoring information, call Ext. 3086.

The Academic Skills Center is located in Room 201 of the Library Learning Center.

ETHNIC SERVICES CENTER

The Ethnic Services Center is a support service offered to students of American ethnic minority backgrounds. Individual as well as group assistance is offered to these students and includes academic advising, personal counseling and career direction. Cultural programming is also a large part of the services offered. For more information contact the Center at Ext. 1096 or Room 206, Bowman Hall.

STUDENTS WITH DISABILITIES

A variety of services, specialized equipment and information on accessibility is available for handicapped students. Students who may require specialized services are asked to contact the office as soon as

possible before beginning classes. Call Ext. 1181.

INTERCOLLEGIATE ATHLETICS

The athletic program contributes to the total educational program of the University. It provides general educational values for the participants and provides a laboratory for those who are in the coaching certification program. Stout is a member of the Wisconsin State University

Athletic Conference, the Wisconsin Women's Intercollegiate Athletic Conference, the National Association of Intercollegiate Athletics and the National Collegiate Athletic Association-Division III. The University sponsors seven women's and nine men's varsity teams. Women's teams include basketball, cross country, gymnastics, swimming, tennis, track and volleyball. Men's teams are baseball, basketball, cross country, football, golf, swimming, tennis, track and wrestling. The "S" Club is a campus organization

for men and women who have earned letters in intercollegiate sports.

STUDENT HANDBOOK

A Stout "Student Handbook" is issued annually to each student. The booklet contains helpful information related to academic housing and campus policies, campus programs, rules and regulations, activities, organizations and services. It contains many of the details not found in the University's catalog.



PROGRAMS OF STUDY

The University allows students to graduate under the provisions of program requirements in effect at the time they began their program of study at Stout. The University, through its advisement system, provides annually updated program plan sheets for each major. Current program plan sheets reflect the competencies most desired in graduates. While students may choose to follow the program requirements listed in the catalog, students are encouraged to follow the program requirements as stated on the program plan sheets at the time of their initial conference with their faculty adviser. Students who begin a program with the intention of graduating from Stout must meet with a faculty adviser within three years of their initial enrollment at a post-secondary institution to determine the program requirements under which they will graduate.

SCHOOL OF INDUSTRY AND TECHNOLOGY

Dr. M. James Bensen, Dean

APPLIED TECHNOLOGY

Applied Technology is based on a foundation of mathematics, science and applied engineering. Program concentrations include Microelectronics, Material and Process Engineering, Communication Systems and Manufacturing Systems. These have been developed to satisfy the expressed need of industry. Coursework requires "hands on" application of engineering theory and practice. Graduates are applications-oriented individuals who are prepared to meet the "high tech" changes facing industry.

This degree program requires each student to complete one year each in college calculus and analytical geometry, chemistry and physics. Therefore, the high school student should prepare with a strong background in mathematics and science. High school course work in electronics, computer programming and technology education is suggested.

MICROELECTRONICS

This concentration enables the graduate to apply knowledge of science and mathematics to solve industrial problems in the area of electronics. Areas of specialization include computers, microprocessors, communication, controls and electromechanical energy conversion.

MATERIAL AND PROCESS ENGINEERING

Graduates in this field use their extensive technical training to (1) establish material standards based upon industrial needs; (2) design, construct and utilize material test equipment; (3) evaluate material properties; (4) select the appropriate materials after analysis of the engineering, environmental, and production requirements to produce the desired product; (5) establish process procedures and specifications appropriate for a specific material or product; and (6) evaluate, select and/or modify processing methods to satisfy production requirements.

COMMUNICATION SYSTEMS

Communication Systems graduates use their extensive communications training to (1) identify and analyze the technical requirements for industrial and business communication; (2) develop plans and propose solutions to satisfy the communication requirements in business and industry, and (3) coordinate the implementation of technical systems for comprehensive communications within the industrial and business environment.

MANUFACTURING SYSTEMS

Graduates apply their knowledge of Computer Aided Manufacturing (CAM), Computerized Numerical Control (CNC), Computer Aided Design (CAD), Computer Aided Process Planning (CAPP) Flexible Manufacturing Systems, Robotics, and Group Technology in an industrial environment. Work may include the design and implementation of manufacturing systems utilizing the newest technologies. These positions may be in the manufacturing engineering department or may report directly to a manufacturing project manager, senior manufacturing systems analyst or senior industrial engineer.

NOTE: The dynamic nature of today's technology requires frequent changes in upper level courses. Consult with your adviser or program director for recently approved program changes.

PROGRAM REQUIREMENTS

GENERAL STUDIES — 33 credits required

Course	Credits
326-101 Freshman English—Composition	3
326-102 Freshman English—Reading and Related Writing	3
354-144 Computer Science I	3
391-100 Fundamentals of Speech	2
320-210 Principles of Economics I	3
170-301 Technology, Resources, Environment	2
366-340 ARC Standard First Aid and Personal Safety	2
326-516 Technical Writing for Industry	3
<i>Select from 3 of the following different departments to total 9 credits</i>	
387-110 Introductory Sociology	3
479-110 General Psychology	3
375-210 Government	3
338-Any History	3
365-Any Philosophy	3
<i>Select 3 credits from:</i>	
326-Any Literature	3
304-Any Art	1-3
360-Any Music	1-3
391-Any Theater	1-3

PROGRAM CORE — 53 credits required

130-103 Communication and Information Technology	3
130-110 Drafting	2
150-150 Industrial Organization	2
170-102 Manufacturing Materials and Processes I	3
170-103 Manufacturing Materials and Processes II	3
311-135 College Chemistry I	5
311-136 College Chemistry II	5
355-156 Calculus & Analytical Geometry I	5
355-157 Calculus & Analytical Geometry II	5
110-270 Circuit Analysis	4
372-281 University Physics I	5
372-282 University Physics II	5
110-371 Solid State Electronics	3
354-331 Probability and Mathematical Statistics I	3

Choose one of the following concentrations:

MICROELECTRONICS CONCENTRATION

110-280 Networks	4
355-255 Differential Equations	3
110-376 Electronics Fabrication Laboratory	2
110-381 Linear Electronic Circuits	3
110-473 Digital Circuits	3
110-541 Digital Logic Systems	3
110-542 Computer Application in Electronics	3
110-574 Microprocessor Fundamentals	3
110-575 Microprocessor Interfacing	3
110-583 Fundamentals of Control	4
110-586 Instrumentation	3
372-527 Physical Electronics	3

Concentration Selectives - to be selected with the approval of the program director (to bring total program credit to 134)

150-595 Seminar	1-2
110-689 Development Practicum	4
354-241 Assembly Language Programming	2
354-145 Computer Science II	3
You may select from 1-6 credits of:	
xxx-xxx Field Experience	
100-x49 Cooperative Education Experience	

ELECTROMECHANICAL SYSTEMS

110-303 Mechanical Power Transmission	3
110-348 Motors and Generators	2
110-372 Electromechanical Energy Conversion	3
170-504 Computer Aided Manufacturing	3

110-585	Electric Power Distribution	3
170-505	Robotics	2
170-510	Manufacturing Systems	3
110-683	Control Systems	3
COMMUNICATION SYSTEMS		
110-582	Electronic Communication Systems	3
110-584	Microwave Systems	3
372-535	Optics	3
372-355	Optoelectronics	3
INSTRUMENTATION AND CONTROL		
355-275	Linear Algebra	3
110-582	Electronic Communication Systems	3
110-683	Control Systems	3
170-510	Manufacturing Systems	3
MATERIAL AND PROCESS ENGINEERING CONCENTRATION		
170-205	Design for Industry	2
170-312	Materials	3
311-201	Organic Chemistry Lecture	3
311-202	Organic Chemistry Laboratory	1
311-501	Physical Chemistry Lecture	3
311-503	Physical Chemistry Laboratory	1
311-541	Chemistry of Materials	3
170-504	Computer Aided Manufacturing	3
<i>Select 8-10 credits</i>		
170-222	Industrial Ceramics	3
170-230	Metal Machining Technology	3
170-357	Metal Casting Processes	3
170-460	Metal Forming and Fabricating	2
170-313	Wood Technology	3
170-365	Production Welding Technology	3
170-250	Plastic Parts Production	2
Concentration Selectives - to be selected with the approval of the program director (to bring total program credit to 134)		
214-150	Textiles	3
170-308	Surface Coatings and Treatments	2
170-513	Manufacturing Processes - Wood Products	3
170-505	Robotics	2
170-510	Manufacturing Systems	3
170-537	Numerical Control	3
170-550	Advanced Plastics	2
170-559	Foundry Seminar	1-2
170-xxx	Advance Metallurgy (Fail.Anal)	3
170-xxx	Weld Engineering	2
170-511	Production and Transfer Tooling	3
311-x99	Independent Study	1-2
170-x99	Independent Study	1-2
170-500	Impacts of Automated Systems	
354-145	Computer Science II	3
354-241	Assembly Language Programming	2
372-325	Strength of Materials	3
You may select 1 to 6 credits of:		
xxx-xxx	Field Experience	
100-x49	Cooperative Education Experience	
COMMUNICATION SYSTEMS CONCENTRATION		
160-105	Fund.of Financial Accounting	2
354-145	Computer Science II	3
130-234	Interactive Graphics	2
354-241	Assembly Language Programming	2
160-310	Management Information Systems	2
110-473	Digital Circuits	3
372-518	Microprocessors or	3
110-574	Microprocessor Fundamentals	3
130-505	Office Automation Technology	2
130-xxx	Networking Personal Computers	2
110-552	Electronic Communication	3
130-504	Communication and Information Systems	3

170-504	Computer Aided Manufacturing	3
600-640	Telecommunications Systems Teleconferencing	2
Concentration Selectives - to be selected with the approval of the program director (to bring total program credits to 134)		
130-xxx	Seminar in Communication and Information System	4
391-208	Theory of Communication	3
354-246	Computer Programming Cobol	2
355-275	Linear Algebra	3
372-252	Laser Light and Waves	1
150-500	Engineering Economy	2
354-341	Data Structures	3
372-355	Optoelectronics	3
170-489	Business and Industrial Internship	2-8
354-441	Computer Architecture and Operating Systems I	3
354-442	Computer Architecture and Operating Systems II	3
110-553	Instrumentation and Control	3
150-514	Industrial Enterprise Practicum	3
372-535	Optics	3
600-504	Elementary Photography	2
130-636	Computer Assisted Design Problems	2
600-615	Micrographic Fundamentals	1
600-630	Audio/Film/TV Production Fundamentals	3
You may select 1 to 6 credits of:		
xxx-xxx Field Experience		
100-x49 Cooperative Education Experience		

MANUFACTURING SYSTEMS CONCENTRATION

170-205	Design for Industry	2
110-260	Introduction to Fluid Power	2
170-222	Industrial Ceramics	3
170-230	Metal Machining Technology	2
130-311	Technical Drafting	3
170-250	Plastics I	2
170-357	Metal Casting Processes	3
170-365	Production Welding Technology	2
170-313	Wood Technology	3
170-504	Computer Aided Manufacturing	3
170-505	Robotics	2
170-510	Manufacturing Systems	3
170-537	Numerical Control in Manufacturing	3
110-553	Instrumentation and Control	3
130-636	Computer Assisted Design Problems	2
Concentration Selectives - to be selected with the approval of the program director (to bring total program credits to 134)		
150-500	Engineering Economy	2
130-xxx	Statics, Strength, Kinematic	3
130-504	Communications and Information Systems	1-3
214-140	Textiles	3
150-200	Production/Operations Management	3
170-280	Packaging Fundamentals	2
110-361	Industrial Hydraulics	2
110-362	Industrial Pneumatics	2
170-513	Manufacturing Processes - Wood Products	3
170-380	Packaging Systems	3
170-489	Business and Industrial Internship	2-8
150-505	Product and Inventory Control	3
150-510	Product Processing	3
150-514	Industrial Enterprise Practicum	3
150-520	Quality Assurance	3
150-530	Material Handling	3
150-540	Time and Motion Study	3
150-550	Plant Layout	3
170-515	Metallurgy	3
170-559	Foundry Seminar	1-3
170-637	Numerical Control II, Continuous Path	3
170-xxx	Weld Engineering	2
354-241	Assembly Language Programming	2
372-518	Microprocessors and Applications	3
You may select 1 to 6 credits of:		
xxx-xxx Field Experience		
100-x49 Cooperative Education Experience		

GENERAL BUSINESS ADMINISTRATION

The Business Administration program at Stout is unique in that it blends business with technology. It has a solid foundation of general-liberal studies and covers the functional areas of marketing, manufacturing, finance, personnel, accounting and law. It also requires comprehensive courses in policies, management information systems, leadership, and the legal and ethical aspects of management. The unique aspect of requiring credits in a technical component allows a student to tap one or more of Stout's technology areas such as construction, packaging, electronics, robotics, foods, textiles, computers and the like to complement the business program.

The program is practical oriented with both a required on-campus practicum and off-campus field experience or internship. Recent graduates have obtained positions in areas of: sales, retailing, production control, manufacturing supervision, purchasing, cost accounting, personnel, restaurant management, automotive customer relations, banking and others.

Admissions to Business Administration Program: Beginning in the summer of 1984, students who enter the University with a declared interest in the Business Administration program are entered into a prebusiness classification. Prebusiness students must be admitted to the Business Administration program before registering for any term in which they will reach a total of 100 accumulated credits. Admission to the Business Administration program may be applied for after completion of the following requirements:

Completion of the following courses with a minimum grade of "C": 326-101, Freshman English—Composition or higher numbered English course; 391-100, Fundamentals of Speech or higher numbered Speech course; 320-210, Principles of Economics I; 160-206, Accounting I; 150-200, Production Management; 130-103, Communication and Information Technology; 160-100, Introduction to Business Administration.

Completion of a total of 45 or more credits with a GPA of at least 2.5/4.0. Transfer students are also entered into the prebusiness classification, and the requirements for admission to the program listed above apply. Transfer students should discuss the timing of their application for admission to the program with the program director during their first enrollment period.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in general/liberal studies	52-55 credits
Required in major studies	57 credits
Technical component	8 credits
Business electives	8 credits
Free electives	2-5 credits
Cumulative grade average for all courses completed at Stout—2.5/4.0	

PROGRAM REQUIREMENTS

GENERAL/LIBERAL STUDIES—52-55 credits required

	Credit
Communications Cluster	
326-101, Freshman English—Composition or 326-111, Freshman English—Honors I	3
326-102, Freshman English—Reading and Related/Writing or 326-112, Freshman English—Honors II	3
326-320, Business Writing or 326-516, Technical Writing for Industry	3
391-100, Fundamentals of Speech	2
<i>Select one course from: 391-236, Listening; 329-121 Practical Spanish; 391-210 Interpersonal Speech Communication; 479-570, Assertive Training Procedures; and one course from: 391-200, Persuasive Speaking; 391-206, Discussion; 391-204 Techniques of Group Leadership; or 391-508, Speech Skills for Business and Industry; or select two courses from 391-200, 391-206 or 391-508.</i>	
<i>Select 6 credits from three areas or courses: 212-xxx, Family Relations; 303-xxx, Anthropology; 336-xxx, Geography; 375-xxx, Political Science; 387-xxx, Sociology; 459-101, Introduction to Vocational Rehabilitation; 479-xxx, Psychology; or 300-510, Introduction to Women's Studies.</i>	
<i>Select 6 credits from three areas or courses: 1xx-, any Futures Course; 300-xxx, Foreign Tour; 300-575, Ascent of Man; 304-xxx, Art History; 326-xxx, Literature; 32x-xxx, Foreign Language (not Spanish I); 338-xxx, History; 365-375, Personal and Professional Ethics, 391-232, Introduction to Theater; or 600-, Film History or TV Appreciation 360-130 Music Appreciation or 365-301 Logic.</i>	
<i>Select 5 credits from any of the following areas including at least one lab course: 308-xxx, Biology; 311-xxx, Chemistry; or 372-xxx, Physics.</i>	
<i>Select 2 credits from any of the following activity-performance areas or courses: 304-xxx, Art; 326-, Advanced Writing; 360-xxx, Music; 391-xxx, Theater Art; 391-202, Oral Interpretation; 391-244, Radio Programming and Production; 391-554, TV Programming and Performance; or 600-504, Elementary Photography</i>	
229-202/205, Nutrition; 366-102, Personal Health; 366-340, ARC Standard First Aid and Personal Safety; or 479-073 Psychology of Stress	2
366-346, ARC Cardiopulmonary Resuscitation or 367-xxx, Physical Education (activity)	1
Quantitative Problem-Solving Cluster:	
Quantitative	
355-123, Finite Mathematics prerequisite high school algebra or 355-xxx Mathematics for Management	4

Computer Related - Foundation	
130-103, Communication and Information Technology	3
Computer Related - Programming (select one)	
354-141, Digital Computer Programming; 354-142, Computer Applications in Business; 354-144, Computer Science I	2-4
Statistics (select one)	
320-325, Economics and Business Statistics; 354-130 Elementary Statistics; or 354-530, Statistical Methods	2-3

MAJOR STUDIES—57 credits required (At least 50% of this section must be taken at Stout.)

Foundation:

150-115, Understanding Business and Industry or	3
150-304, Principles of Business Management	3
160-100, Introduction to Business Administration	1
160-206, Accounting I	3
160-207, Principles of Accounting II	3
320-210, Principles of Economics I	3
320-215, Principles of Economics II	3

Basic Functional:

150-200, Production Operations Management	3
160-330, Principles of Marketing	3
479-582, Human Resource Management	3
160-318, Business Law I	3
160-340, Business Finance	3
150-600 Organizational Management	3

Advanced:

Select one course from each of the following four areas: 2 cr. min. Accounting-Cost/Finance: 160-335, 160-312, 160-320, 245-371, 150-500, 150-570, 130-475, or 214-430. Production-Operation: 150-505, 150-520, 150-530, 150-540, 229-650, 150-220, 130-543, or 214-274. Marketing: 160-334, 160-336, 160-337, 245-344, 160-370, 160-323, 160-438, 160-585, 214-227, 214-329, or 214-527. Human Resources-Supervision: 140-581, 140-583, 198-560, 320-421, 459-587, 479-602, 245-625, or 150-630.

Comprehensive:

Select one course from all five areas: Legal: 140-590, 160-319, 160-355, 160-573, 160-601, 245-625, or 160-xxx. Economics-Finance: 320-440, 320-445, 320-550, 320-435, 320-420, 320-680, or 320-xxx. Computer Applications and Software: 130-234, 160-310, 130-504, 354-144, 354-246, 600-580, 130-505, or 170-504. International: 160-260, 160-585, 160-xxx, or 320-680. Integrated Systems: 160-690, 160-230, or 150-660.

Applied:

Select one practicum course: 3 cr. minimum. 150-514, Industrial Enterprise Practicum; 160-461 Business Practicum/Management, 160-520 Seminar, 214-426 Fashion Merchandising Practicum; 245-312, Restaurant Operational Management; or other related practicum course.

Select one off-campus experience: 2 cr. minimum. 160-x49, Co-op Work Experience; 160-x89 Internship; or 160-x98, Field Experience.

TECHNICAL COMPONENT—8 credits

Select 8 credits of technical courses related to career areas such as Foods, Computers, Photography, Packaging, Textiles, Robotics, Automotive, Construction or others with approval of the Program Director.

ELECTIVES

Business Electives—8 credits, must include at least two courses of which must be from Stout.

Free Electives—2-15 credits

Cumulative grade average for the last 40 program credits, completed at Stout 2.5/4.0.

INDUSTRIAL TECHNOLOGY

Stout's Industrial Technology degree is a broadly based program designed to prepare individuals for a variety of responsible industrial positions. Graduates have gained recognition and success in many areas of industry. Typical assignments include production or construction supervision, quality assurance, packaging, process engineering, methods engineering, systems analysis, production control, cost estimating, purchasing, product design, sales and service, plant engineering, industrial relations, tools design, prototype development, and technical communications.

The program provides for learning experiences to develop competencies in each of four broad areas: knowledge of the characteristics of materials and manufacturing processes; understanding of management principles and their application to industrial problems; awareness of the environmental and sociological implications and those psychological principles which are important in working with, communicating with, motivating, and supervising people; and skill in utilizing the mathematical and physical sciences to understand and solve technological and economic problems found in industry.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in General/Related Studies	54-66 credits
Required in Professional/Technical Studies	62-63 credits
Electives	1-14 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—57-68 credits required

Course	Credit
326-101 and 102, Freshman English	6
326-xxx, Advanced Writing elective	3
391-100, Fundamentals of Speech	2
391-xxx, Advanced Speech elective	2
367-1xx, Physical Education	1
366-101, Health Survey	1
479-110, General Psychology or	3
479-150, Humanistic Psychology	3
<i>Select any two of the following Social Science courses: 387-110, Introductory Sociology; 375-210, Government; 303-220, Introduction to Cultural Anthropology; or 388-xxx, History</i>	
	6
320-201 or 210-210, Economics	3
355-153, Calculus I or	
355-120, 121 and 153 Introductory College, Mathematics I and II and Calculus I or	12
355-156, Calculus and Analytic Geometry I	5
354-130, Elementary Statistics or	2
354-530, Statistical Methods	3
354-141, Digital Computer Programming	2
311-115, General Chemistry I	5
372-221 and 372-223, Mechanics and Electricity, and Light and Sound	8
<i>Select two to three credits from Humanities and Fine Arts group</i>	2-3
304-xxx, Art Elective; 326-xxx, Literature Elective; 360-xxx, Music Elective; 365-201, Introduction to Philosophy; 365-375, Personal and Professional Ethics; or 391-xxx, Theater Course Elective.	
<i>Select two to three credits from Environment group</i>	2-3
308-122, Biology: An Environmental Approach; 311-553, Environmental Chemistry; 170-301, Technology-Resources-Environment; 308-150, Man and Environment; or Approved Elective.	
<i>Select four to five credits from Personal Health/Development group</i>	4-5
367-xxx, Physical Education and 366-101, Health Survey.	
<i>Select additional two to three credits from:</i>	4-5
229-202, Fundamentals of Nutrition; 212-250, Individual and Family Relations; 479-570, Assertiveness Training Procedures; 367-xxx, Physical Education Activity; or Approved Elective.	

PROFESSIONAL/TECHNICAL STUDIES—62-63 credits required

150-150, Industrial Organization	2
150-200, Production/Operations Management	3
160-105, Fundamentals of Financial Accounting	2
150-500, Engineering Economy	3
150-600, Organizational Leadership	3
479-483, Human Resources Development	2
320-420, Labor Economics or 320-421, Collective Bargaining and Labor Relations	2-3
140-581, Principles of Occupational Safety	2
160-232, Fundamentals of Marketing	2
<i>Technical Foundation Courses:</i>	
110-204, Electricity/Electronics Fundamentals	3
130-110, Drafting	2
<i>Select an additional six to eight credits, depending upon concentration, from:</i>	
110-103, Power Mechanics	2
110-260, Introduction to Fluid Power	2
130-120, Construction Drafting	2
130-140, Graphic Arts	2
170-202, Metals	2
170-222, Industrial Ceramics	3

170-250, Plastics I	2
170-270, Light Building Construction	2
170-275, Construction Materials	2
170-280, Packaging Fundamentals	2

CONCENTRATION CORE—A minimum of 20 required credits in one of the following concentrations, plus 10 additional professional/technical selectives is required.

BUILDING CONSTRUCTION

- 130-424 Architectural Technology
- 130-526 Building Construction Specifications
- 150-570 Estimating and Analyzing Construction Costs
- 150-670 Systems Approach to Construction Management
- 170-370 Commercial Building Construction
- 150-x98 Field Experience or
- 170-575 Building Construction Practicum
- 160-573 Legal Aspects of Construction
- 130-527 Site Engineering

ELECTRONICS

- 110-343 Introduction to Solid-State Electronics
 - 110-543 Linear Circuits
 - 110-556 Digital Circuits
 - 110-640 Techniques for Network Analysis
 - 372-518 Microprocessors and Applications
 - 355-154 or 157 Calculus II or Calculus and Analytic Geometry II
 - 355-255 Differential Equations
- Select at least three additional courses from among:
- 110-348 Motors and Generators
 - 110-552 Electronic Communication
 - 110-517 Applied Integrated Circuits
 - 372-518 Microprocessors and Applications

GRAPHIC ARTS

- 130-246 Typography
- 130-251 Composition
- 130-355 Line and Halftone Photography
- 130-366 Image Transfer
- 130-370 General Binding
- 130-475 Printing Economics
- 130-543 Graphic Arts Production Techniques
- 130-557 Color Separation

INDUSTRIAL DISTRIBUTION

- 160-336 Industrial Marketing Management
- 160-438 Industrial Distribution
- 160-334 Sales and Sales Management
- 391-xxx Listening
- 160-xxx Industrial Distribution Seminar

MANUFACTURING ENGINEERING

- 150-540 Time and Motion Study
 - 150-505 Production and Inventory Control
 - 150-520 Quality Assurance
 - 160-410 Manufacturing Cost Analysis
 - 150-510 Production Processing
- Select two options from the following:
- 130-290 Mechanics of Solids I or
 - 372-531 Statics
 - 130-291 Mechanics of Solid II or
 - 372-325 Strength of Materials
 - 130-592 Mechanics of Machinery I or
 - 372-533 Dynamics
 - 130-593 Mechanics of Machinery II
 - 372-222 Heat and Thermodynamics
 - 311-531 Quantitative Analysis
 - 311-541 Chemistry of Materials

MECHANICAL POWER TRANSMISSION

- 110-348 Motors and Generators
- 110-303 Mechanical Power Transmission
- 110-603 Problems in Power Transmission
- 160-334 Salesmanship and Sales Management
- 150-530 Material Handling Approved Selective

PACKAGING

- 170-280 Packaging Fundamentals
- 170-315 Packaging Materials
- 170-380 Packaging Systems
- 170-480 Packaging Design and Evaluation
- 170-580 Packaging Development
- 170-585 Packaging Seminar
- 304-101 Fundamentals of Design
- 311-541 Chemistry of Materials or
- 372-325 Strength of Materials or
- 308-306 General Microbiology

PLANT ENGINEERING

- 130-424 Architectural Technology
 - 150-550 Plant Layout
 - 150-x97 Field Experience-Series
 - 150-xxx Internship
 - 311-553 Environmental Chemistry
 - 150-450 Maintenance Management
 - 372-222 Heat and Thermodynamics
 - 372-325 Strength of Materials
- Select one of
- 110-506 Energy Management
 - 150-530 Material Handling
 - 170-372 Heating and Air Conditioning

PRODUCT DEVELOPMENT

- 130-290 Mechanics of Solids I
- 130-291 Mechanics of Solids II
- 130-592 Mechanics of Machinery I
- 130-593 Mechanics of Machinery II
- 130-532 Mechanical Design
- 130-537 Mechanical Design Drafting
- 130-311 Technical Drafting

SECONDARY RESOURCE MANAGEMENT

- 170-301 Technology-Resources-Environment
- 170-401 Solid Waste Technology
- 170-403 Secondary Resource Systems Management
- 170-503 Resource Recovery Practicum
- 160-410 Manufacturing Cost Analysis
- 311-541 Chemistry of Materials

TECHNICAL COMMUNICATIONS

- 130-103 Communication and Information Technology
- or
- 391-208 Theory of Communication
 - 160-370 Principles of Advertising
 - 130-xxx Advanced Graphic Arts Course
 - 130-414 Technical Illustration
 - 600-504 Elementary Photography
 - 600-561 Preparation of A/V Material
- Select five credits
- 354-240 Intermediate Computer Programming
 - 326-425 Copy Editing and Preparation
 - 600-630 Audio/Film/TV Production Fundamentals
 - 130-636 Computer Assisted Design Problems

TECHNICAL SALES AND SERVICE

- 150-520 Quality Assurance
- 160-410 Manufacturing Cost Analysis
- 160-318 Business Law I
- 150-304 Principles of Management
- 160-330 Principles of Marketing
- 160-334 Salesmanship and Sales Management
- 160-370 Principles of Advertising
- 160-679 Market Research or
- 479-579 Public Relations

GENERAL OR SPECIAL

Students who have identified professional objectives which cannot be met within the established concentration may develop in consultation with the program director, a special program to meet personal interests and needs. The student who cannot or does not wish to select a specific concentration will be placed in a structured, general program.

OFF CAMPUS LEARNING EXPERIENCES

Three types are available: Field Experience; Cooperative Education Experience; and Internship. Students are encouraged to plan early for this learning experience since competition for industry-related sites is keen and those with the best preparation are selected.

ELECTIVES—11-19 credits required

Candidates for the degree should select their electives to complement objectives of their concentration.

MARKETING AND DISTRIBUTIVE EDUCATION

The field of marketing requires training for owners, managers, and employees engaged primarily in marketing or merchandising goods and services. Marketing Teacher Education at Stout provides the teachers to train the work force.

Marketing and Distributive Education is one area of vocational education supported by local, state and federal funds. Teachers graduating with this major are prepared to teach marketing and distributive education at the secondary and post-secondary levels. Many graduates enter marketing positions in business and industry.

Marketing and Distributive Education students have three options from which to choose in order to fulfill their major requirements—General Marketing, Fashion Merchandising, and Hotel and Restaurant Management.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 130-134 credits
 Required in liberal studies 53 credits
 Required in major studies 34-36 credits
 Required in professional education 42 credits
 Electives 1-3 credits
2. Although it is not a requirement for graduation, students should be aware of the fact that they must acquire a minimum of 4,000 hours of occupational experience before they can be certified for teaching vocational marketing and distributive education in Wisconsin and Minnesota.
3. Students must fulfill the English adequacy and speech proficiency requirements.
4. Specific course requirements and additional information about minors and/or concentrations can be obtained from the Program Director.
5. Students must have a 2.3 or higher cumulative grade point average to enter the teacher education program. Some courses require an "A" or a "B" to be counted in this program.
6. Participation in Collegiate DECA is required.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—53 credits required

Course	Credit
English (326-101 and 102, or 326-111 and 112)	6
Speech (391-100)	2
Physical Education (367-xxx)	2
Health Survey (366-101)	1
Social Science (320-210 and 215, 375-210 and 387-110)	12
Business Mathematics (355-119)	4
Science (must include one lab course)	8
Humanities	9
Fine Arts	3
Electives	6

MAJOR STUDIES—34-36 credits required

Option No. 1—General Marketing/Retailing	
160-206, Accounting I	3
160-207, Accounting II	3
150-304, Principles of Business Management	3
160-318, Business Law I	3
160-323, Retail Merchandising and Management	3
160-330, Principles of Marketing	3
160-334, Salesmanship and Sales Management	3
160-370, Principles of Advertising	3
150-600, Organizational Leadership	3
479-582, Human Resource Management	3
Select from 4 to 6 credits:	
160-355, Principles of Risk Management	2
160-365, Principles of Real Estate	2
160-679, Marketing Research	3
160-690, Administrative and Business Policies	3
320-325, Economic and Business Statistics	3
479-579, Public Relations	2
Total 34-36	

Option No. 2—Fashion Merchandising

160-206, Accounting I	3
160-207, Accounting II	3
150-304, Principles of Business Management	3
160-323, Retail Merchandising and Management	3
160-330, Principles of Marketing	3
160-334, Salesmanship and Sales Management	3
160-370, Principles of Advertising	3
214-120, Introduction to Apparel, Textiles and Merchandising	2
214-225, Clothing and Textile Industry	3
214-227, Basic Merchandising	3

214-525, Mens' and Boys' Merchandising	1
<i>Select from 4 to 6 credits:</i>	
214-398, Field Experience	2
214-519, Textile and Clothing Economics	3
214-329, Fashion Merchandise Promotion	3
214-430, Merchandise Planning and Control	2
214-625, Mass Merchandising	3
<hr/>	
Total 34-36	

Option No. 3—Hotel and Restaurant Management

160-206, Accounting I	3
160-207, Accounting II	3
150-304, Principles of Business Management	3
160-323, Retail Merchandising and Management	3
160-330, Principles of Marketing	3
160-334, Salesmanship and Sales Management	3
160-370, Principles of Advertising	3
245-100, The Role of Management in the Hospitality Industry	2
245-240, Introduction to Tourism and the Travel Industry	2
245-205, Hospitality Organization Management	3
308-206, Food Service and Environmental Sanitation	1
<i>Select from 4 to 6 credits:</i>	
229-124, Foods	4
245-202, Front Office Management	3
245-344, Hospitality Marketing and Sales	3
<hr/>	
Total 34-36	

PROFESSIONAL EDUCATION REQUIREMENTS—42 credits

Marketing and Distributive Education—24 credits

196-201, Introduction to Distributive Education	3
196-202, Supervision of Distributive Education Clubs	3
196-301, Methods in Distributive Education	4
196-401, Distributive Education Curriculum	3
196-501, Simulation in Distributive Education—Model Stores	3
196-408, Student Teaching - Distributive Education	8

Educational, Vocational Education, General Psychology—18 credits

479-100, General Psychology	3
421-205, Human Relations for the Helping Professions	2
421-303, Educational Psychology	2
421-682, Reading Methods - Secondary Schools	2
431-630, Mainstreaming Special Students	3
199-502, Principles of Vocational, Technical and Adult Education	2
199-560, Cooperative Occupational Educational Programs	2
600-560, Audio-Visual Communications	2
<hr/>	
Total 42	

GENERAL ELECTIVE - From 1 to 3 credits

TECHNICAL EDUCATION

The Technical Education degree program is designed for persons interested in teaching at the technical institute or junior college level.

The growth of the technical programs in post high school institutions has created a need for teachers who have depth of training and experience in a particular technology. The starting salary for post high school teachers is usually higher than for other teaching positions.

The degree requires a serious interest in a technology as well as a strong capability in mathematics and physical science. The students must also be available during summer periods so that the minimum related work experience requirement of 2,000 hours can be met.

Some technical teaching positions require that the teacher serve, on a part-time basis, in one of the academic areas related to the technology. To teach mathematics or science at a technical institute in Wisconsin on less than half time load, the teacher must have a minimum of 20 credits in the discipline. It is recommended that the prospective technical teacher prepare to teach in mathematics or science.

Program plans are available for two technologies, electronics and mechanical design. These programs are described in detail below. Because there are so many recognized technologies and the need for teachers in certain technologies is limited, formal program plans for special technologies are custom made for the student. The program director for the Technical Education major must be contacted in advance of the school term so a valid degree program in a specific technology can be arranged.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation	130 credits
Required in liberal studies	57-59 credits
Required in major studies	42-49 credits
Required in professional education	22 credits
Electives	2-8 credits
2. Completion of adequate related industrial experience.	

PROGRAM REQUIREMENTS

LIBERAL STUDIES—57-64 credits required

Course	Credit
326-101 and 102, Freshman English	6
326-xxx, Advanced Writing elective	3
391-100, Fundamentals of Speech	2
391-xxx, Advanced Speech elective (electronics only)	2
355-120 and 121, Mathematics	8
355-153 and 154, Calculus (mechanical design 153 only) or	8
355-156 and 157, Calculus and Analytic Geometry	10
479-110, General Psychology	3
338-xxx, History elective	3
320-201, General Economics	3
375-210, Government	3
367-1xx, Physical Education	2
366-101, Health Survey or	1
366-340, ARC Standard First Aid and Personal Safety	
311-115, Introductory College Chemistry	5
372-221, Mechanics and Electricity	5
372-222, Heat and Thermodynamics (mechanical design only)	3
372-223, Light and Sound (electronics only)	3
326-xxx, Literature elective (electronics only)	3

MAJOR STUDIES—41-49 credits required in either Electronics Concentration or Mechanical Design Concentration.

Electronics Concentration—41 credits

110-204, Electricity	3
110-343, Intro. to Solid State Electronics	3
110-348, Motors and Generators	2
110-543, Linear Circuits	3
110-556, Digital Circuits	3
110-548, Instrumentation and Control	3
110-640, Techniques of Network Analysis	3
372-518, Microprocessors and Applications	3
110-552, Electronic Communication	3
372-252, Laser and Light Waves	1
130-110, Drafting	2
170-202, Metals	2
110-103, Power Mechanics	2
150-150, Industrial Organizations	2
354-141, Digital Computer Programs	2
Electives (Technical)	4

Mechanical Design Concentration

130-110, Drafting	2
130-311, Technical Drafting	3
130-212, Descriptive Geometry	3
130-290, Mechanics of Solids I	3
130-291, Mechanics of Solids II	3

130-592, Mechanics of Machinery I	3
130-593, Mechanics of Machinery II	3
130-532, Mechanical Design	4
130-433, Tool and Die Design	2
130-537, Mechanical Design Drafting	2
110-204, Electricity	3
354-141, Digital Computer Programming	2
150-150, Industrial Organization	2
170-515, Metallurgy	3
170-101, Processes: Concepts	3
170-230, Machine Shop	2
Electives	6

PROFESSIONAL EDUCATION—24 Credits required

190-205, Methods of Teaching Industrial Education	2
190-405, Curriculum Development	2
190-406, Instructional Evaluation in Industrial Education	2
190-408, Student Teaching	8
199-502, Principles of Vocational, Technical and Adult Education	2
199-534, Task Analysis	2
413-501, Introduction to Guidance	2
421-205, Human Relations	2
421-303, Educational Psychology	2

ELECTIVES—2-8 credits required

To be selected in consultation with adviser.

TECHNOLOGY EDUCATION

Technology education (formerly industrial education) is a bachelor of science degree program consisting of 130 semester credits of general, professional and technical course work. The program leads to teaching certification in all 50 states. Although this program is designed to lead to an education degree, graduates find challenging career opportunities in business and industry as well. Students study fields such as communication, construction, manufacturing and transportation. They work with technologies such as computers, robots and lasers and with more conventional equipment used in processing materials, energy and information. Students are required to complete at least 50 credits of general education in areas such as English, mathematics, science, speech and social studies. They are also required to complete 29 credits of professional education in areas of curriculum and instruction, human behavior and student teaching in a secondary school. Forty-four credits of technical work are also required. Of this, 35 credits are prescribed for all students in the majors and 9 credits are electives to permit additional study in a selected area of communication, construction, manufacturing or transportation.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in general studies	50 credits
Required in major studies	44 credits
Required in professional education	29 credits
Electives	7 credits

PROGRAM REQUIREMENTS

GENERAL STUDIES—50 credits required

Course	Credit
326-101 and 102, Freshman English	6
326-xxx, Advanced Writing elective	3
391-100, Fundamentals of Speech	2
391-xxx, Advanced Speech elective	2
355-120 and 121, Introductory College Mathematics I and II	8
479-110, General Psychology	3
320-201, General Economics	3
338-xxx, History elective	3
387-110, Introductory Sociology	3
375-210, Government	3
311-115, General Chemistry I	5
372-231, General Physics	4
Science Elective	2
366-101, Health Survey	1
367-1xx, Physical Education elective	2

MAJOR STUDIES—44 credits required

110-105 Energy Technology	3
110-201 Transportation	2
130-103 Communication and Information Technology	3
130-504 Communication and Information Systems	3
170-102 Manufacturing: Materials and Processes I	3
170-103 Manufacturing: Materials and Processes II	3
170-270 Light Building Construction	2
170-205 Design for Industry	2
130-110 Drafting	2

110-204	Electricity-Electronics Fundamentals	3
110-551	Introduction to Microprocessors	3
150-514	Industrial Enterprise Practicum	3
1xx-4xx	Research Development	2
Technical electives		9

PROFESSIONAL EDUCATION—29 credits required\$

190-160,	Introduction to Industrial Education	2
190-205,	Methods of Teaching Industrial Education	2
190-390,	Laboratory and Classroom Management in Industrial Education	2
190-405,	Curriculum Development in Industrial Education	2
190-406,	Instructional Evaluation in Industrial Education	2
190-408,	Student Teaching	8
413-501,	Introduction to Guidance	2
421-303,	Educational Psychology	2
421-422,	Principles of Secondary Education	2
421-682,	Reading Methods - Secondary School	2
431-630,	Mainstreaming Special Students	3

ELECTIVES—7 credits required

Select courses offered at Stout or those approved for transfer.

VOCATIONAL CERTIFICATION

A student who wishes to become vocationally certifiable in Wisconsin must complete the course 469-502 Principles of Vocational, Technical and Adult Education and have a minimum of 2,000 hours of related work experience.

VOCATIONAL EDUCATION

The undergraduate vocational teacher education program in trades and industries is especially designed to prepare a person to teach a trade type occupation to a broad segment of this country's work force. Future auto mechanics, welders, machinists, electricians and others require well prepared teachers to teach the necessary skills and knowledge.

Job opportunities for vocational trade and industrial teachers have been on a constant increase. These opportunities are found in vocational schools, community colleges, private vocational schools and in the training departments of industrial plants.

An individual who has completed an apprenticeship or vocational training program in a trade and has worked as a tradesman makes an ideal candidate for this program.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 130 credits
 - Required in liberal studies 52 credits
 - Required in major studies 42 credits
 - Required in professional education 24 credits
 - Electives 16 credits
2. A student must obtain a minimum of 2,000 hours of appropriate work experience for provisional certification to teach vocational, trade and industrial courses. This requirement must also be met before a degree can be granted. (For more details, see program director.)
3. Students must make applications for admission to the education sequence. Candidates must hold a cumulative grade point average of at least 2.25 and meet the speech, English and health requirements as described in the Professional Education section of course descriptions.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—53-55 credits required

Course	Credit
326-101 and 102, Freshman English	6
326-xxx, Advanced Writing elective	3
391-100, Fundamentals of Speech	2
391-xxx, Advanced Speech elective	2
354-141, Digital Computer Programming	2
355-120 and 121, Introduction to College Math I and II	8
479-110, General Psychology	3
320-201, Economics	3
338-xxx, History elective	3
387-110, Sociology	3
375-210, Government	3
311-115, Introductory College Chemistry	5
372-221, Mechanics and Electricity	5
Science elective	3
366-101, Health Survey or	1
366-340, ARC Standard First Aid and Personal Safety	2
367-1xx, Physical Education	2

MAJOR STUDIES—42 credits required

Because each student brings different qualifications as a result of prior training and experience, the student with the assistance of the program director will define all 42 technical credits in terms of student and job competency needs.

PROFESSIONAL EDUCATION—24 credits required

190-205, Methods of Teaching Industrial Education	2
190-405, Curriculum Development	2
190-406, Instructional Evaluation in Industrial Education	2
190-408, Student Teaching	8
199-502, Principles of Vocational, Technical and Adult Education	2
199-534, Task Analysis	2
413-501, Introduction to Guidance	2
421-205, Human Relations	2
421-303, Educational Psychology	2

ELECTIVES—9-11 credits required

SCHOOL OF HOME ECONOMICS

Dr. J. Anthony Samenfink, Dean

CHILD DEVELOPMENT AND FAMILY LIFE

The Child Development and Family Life program is the study of human development and family life in which child, family and community are viewed as interrelated. A multi-disciplinary approach provides perspective and specialized knowledge to deepen the understanding of people and to develop creative approaches to serving them. Graduates of the program are prepared for advanced study that will lead to positions in family life education, university teaching and research, child care services, and related areas.

The program integrates academic study with significant experiential learning with children, families and community groups. Students are involved in observation/participation, field experience, independent study and practicum throughout the program. They work in Stout's Child and Family Study Center, Day Care, and/or Infant-Toddler Laboratory. Schools, hospitals, human service agencies, community groups, adolescent group homes, homes for older people, and University Extension programs provide opportunities for the synthesis of practical and theoretical knowledge in child development and family life.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	128 credits minimum
Required in general studies	49 credits
Required in major studies:	
Child Development Concentration	79 credits
Family Life Concentration	79 credits
Human Resources Management Concentration	79 credits

PROGRAM REQUIREMENTS**GENERAL EDUCATION STUDIES—49 credits required****General Requirements—minimum of 16 credits**

Course	Credit
326-101 Freshman English: Composition* or Freshman English-Honors I	3
326-102 Freshman English: Reading and Related Writing* or Freshman English-Honors II	3
391-100, Fundamentals of Speech*	2
Select a minimum of 9 credits from: Biology 308-122, 132, 332, 333; Chemistry 311-115, 135; Physics 372-221, 251, 252, 254; Mathematics 355-118*, 120	9
Select a minimum of 12 credits from: Anthropology 303-220, 250; Economics 320-201, 210; Geography 336-104; Political Science 375-210; Psychology 479-110*; or Sociology 387-110*	12
Select a minimum of 13 credits from: Literature (minimum of 3 credits) 326-303, 348, 355, 360, 400; History (minimum of 3 credits) 338-105, 120, 140; Language and Philosophy (minimum of 2 credits) 326-339, 328-101, 329-103, 326-201, 301, 300-255, 100-500; Fine Arts (minimum of 5 credits) from Art, Music, Media, Speech, Theater	13
367-xxx, Any Physical Education Activity Course(s)*	1

Electives to total 49 credits.

Required courses with a minimum grade of "C" or better, including transfer credits*

MAJOR STUDIES—79 credits required**Family Life Concentration—79 credits**

212-101, Introduction to Child Development and Family Life*	1
212-401, Issues in Child Development and Family Life*	1
212-124, Child Development I*	3
212-163, Adult-Child Interaction*	2

212-524, Child Development II*	3
212-530, Adulthood and the Family*	3
212-680, The Aging Person	2
212-250, The Individual and Family Relations*	3
212-350, Dynamics of Family Development*	3
212-660, Current Topics in Sexuality*	1
387-205, Introduction to Social Work*	3
387-420, Child and Family Agencies*	2
212-685, Seminar—The Culturally Distinct Child and Family*	3
212-264, Child Guidance*	2
242-201, Teaching Techniques in Home Economics*	2
242-651, Family Life Education Programs*	2
212-407, Parent Education/Involvement*	2
212-535, Seminar on Self-Growth*	2
212-650, Introduction to Marriage and Family Therapy*	3
212-651, Marriage and Family Therapy Seminar*	3
413-666, Alcoholism and Family Systems Intervention*	2
375-510, Public Policy Analysis*	3
212-601, Child and Family Law*	3
212-610, Family Impact Seminar*	3
212-654, The Workplace and Family*	2
245-676, Family Finance*	2
212-553, Dual Career Families*	1
212-590, Family Research and Methodology*	3
212-265, Child Guidance Practicum*	1
212-693, Practicum in Child Development and Family Life*	4
<i>Choose 3 credits from the following:</i>	
212-251, Early Years of Marriage	1
212-351, Death and the Family	1
212-352, Parenthood	1
212-451, Divorce	1
212-554, Single Parent Family	1
212-570, Singlehood	1
212-580, Future of the Family	1
212-638, Child Abuse and Neglect	2
212-652, Fatherhood	1
212-666, Family Planning	1
387-215, Sociology of the Family	3
<i>Choose 3 credits from the following:</i>	
229-212, Nutrition	3
245-360, Consumer Economics	3
245-650, Human Habitat	3
Electives to total 79 credits	

Child Development Concentration—79 credits

212-101, Introduction to Child Development and Family Life*	1
212-401, Issues in Child Development and Family Life*	1
212-124, Child Development I*	3
212-163, Adult-Child Interaction*	2
212-524, Child Development II*	3
212-530, Adulthood and the Family*	3
212-264, Child Guidance*	2
212-204, Teaching/Learning Strategies in Early Childhood*	5
212-342, Creative Activities for Young Children*	3
212-407, Parent Education/Involvement*	2
212-665, Administration—Early Childhood Education Programs*	2
212-601, Child and Family Law*	3
212-610, Family Impact Seminar*	3
212-535, Seminar on Self-Growth*	2
212-607, Parent Counseling*	2
212-590, Family Research and Methodology*	3
212-265, Practicum in Child Guidance*	1
212-235, Child Development Laboratory*	1
212-693, Practicum in Child Development and Family*	4
375-510, Public Policy Analysis*	3
366-340, ARC Standard First Aid and Personal Safety*	2
212-250, Individual and Family Relations*	3
212-350, Dynamics of Family Development	3
387-205, Introduction to Social Work*	3
212-685, Seminar—The Culturally Distinct Child and Family*	3
387-420, Child and Family Agencies*	2

Choose 2 credits from the following:

431-532, Psychology of the Exceptional Child	2
212-680, The Aging Person	2
229-136, The Food for Young Children	2

Choose 4 credits from the following:

212-351, Death and the Family	1
212-352, Parenthood	1
212-451, Divorce	1
212-553, Dual Career Families	1
212-554, The Single Parent Family	1
212-580, Future of the Family	1
212-638, Child Abuse and Neglect	2
212-652, Fatherhood	1
212-666, Family Planning	1
387-215, Sociology of the Family	1

Choose three credits from the following:

229-404, Food Service Management for Child Care Centers	2
229-405, Food Service Practicum for Child Care Centers	1
150-600, Organizational Leadership	3
387-250, Social Psychology	3
479-582, Human Resource Management	3
Electives to total 79 credits	

Human Resources Management Concentration—79 credits

212-101, Introduction to Child Development and Family Life*	1
212-401, Issues in Child Development and Family Life *	1
212-124, Child Development I*	3
212-163, Adult Child Interaction*	2
212-524, Child Development II*	3
212-530, Adulthood and the Family*	3
212-250, Individual and Family Relations*	3
212-350, Dynamics of Family Development*	3
387-205, Introduction to Social Work*	3
387-420, Child and Family Agencies*	2
212-264, Child Guidance*	2
242-201, Teaching Techniques in Home Economics*	2
242-651, Family Life Education Programs*	2
212-535, Seminar on Self-Growth*	2
212-650, Introduction to Marriage and Family Therapy*	3
212-651, Marriage and Family Therapy Seminar*	3
413-666, Alcoholism and Family Systems Intervention*	2
150-600, Organizational Leadership*	3
479-582, Human Resource Management*	3
212-665, Administration—Early Childhood Education Programs*	2
375-510, Public Policy Analysis*	3
212-601, Child and Family Law*	3
212-610, Family Impact Seminar*	3
212-654, The Workplace and the Family*	2
245-676, Family Finance*	2
212-553, Dual Career Families*	1
212-590, Family Research and Methodology*	3
212-265, Child Guidance Practicum*	1
212-693, Practicum in Child Development and Family Life*	4

Choose three credits from the following:

212-251, Early Years of Marriage	1
212-351, Death and the Family	1
212-352, Parenthood	1
212-451, Divorce	1
212-554, The Single Parent Family	1
212-570, Singlehood	1
212-580, Future of the Family	1
212-638, Child Abuse and Neglect	2
212-652, Fatherhood	1
212-660, Current Topics in Sexuality	1
212-666, Family Planning	1
387-215, Sociology of the Family	3

Choose three credits from the following:

229-212, Nutrition*	3
245-360, Consumer Economics*	3
245-650, Human Habitat*	3

CLOTHING, TEXTILES AND DESIGN

The Clothing, Textiles and Design program is organized into four concentrations related to selected areas of the clothing and textile industries and integrates specific vocational education with liberal education. Students select one major concentration and an appropriate minor or 22-credit emphasis area.

Career opportunities for a graduate in the Clothing, Textiles and Design program are directly related to the areas of concentration. The Apparel Manufacturing Concentration prepares graduates for positions related to apparel manufacturing and operations. The Apparel Design Concentration prepares graduates for careers in designing apparel, fashion illustration, fashion coordination, promotion or public relations. The Textile Design Concentration provides opportunities to develop creative expression in applied textile design or in fabric design. The Textile Technology Concentration prepares graduates for careers in quality control, product evaluation, mill production or manufacturing supervision. Graduates are prepared for advanced study that would lead to careers in textiles, chemistry, research and engineering.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
General studies	48 credits
Professional studies	50 credits
Minor or emphasis	22 credits
Free electives	10 credits

PROGRAM REQUIREMENTS

GENERAL STUDIES—48 credits required

Course	Credit
304-101, Fundamentals of Design	3
320-210, Principles of Economics I	3
326- Freshman English: Composition or	
326-111 Freshman English—Honors I	3
326-102 Freshman English: Reading and Related Writing or	
326-112 Freshman English—Honors II	3
366-xxx or 367-xxx, Physical Education	2
339-100, Fundamentals of Speech	2
<i>Select 3.5 credits from the following areas: 308-132 Physiology and Anatomy (for Apparel Design Concentration); 311-115 or 311-135 Chemistry (for Textile Concentration); 372-xxx Physics.</i>	
<i>Select 4 credits from the following areas: 354-xxx Applied Math or 355-xxx Math.</i>	
<i>Select 3 credits from the following areas: 212-250 Family Relationships I, 303-220 Introduction to Cultural Anthropology or 387-110 Introductory Sociology.</i>	
<i>Select 3 credits from the following areas: 479-110 General Psychology or 479-150 Man: A Course of Study.</i>	
<i>Select 6 credits from at least two of the following areas: 304-xxx Art-non-performance, 326-xxx Literature, 338-xxx History, 360-xxx Music-non-performance, 365-xxx Philosophy, 375-xxx Political Science, 500-xxx Interdisciplinary Studies.</i>	
<i>Select 6 credits from at least two of the following areas: 304-xxx Art-performance, 326-xxx Writing, 328-xxx or 329-xxx Foreign Language, 360-xxx Music-performance, 391-xxx Speech.</i>	
<i>Select liberal arts elective credits not included in concentration to total a minimum of 48 credits.</i>	

MAJOR STUDIES-50 credits required from concentration selected

Concentration in:

APPAREL DESIGN

214-120 Introduction to Apparel, Textiles and Merchandising
214-110 Principles of Apparel Design
214-140 Textiles
214-225 Clothing and Textile Industry
214-266 Apparel Construction
214-519 Textile and Clothing Economics
214-366 Pattern Adjustment and Fit
304-534 Fashion Illustration
214-368 Experimental Clothing
214-550 Textile Evaluation
214-398 Fashion Merchandising Field Experience
214-375 Grading Apparel Patterns
214-610 History of Costume-Ancient to European or
214-611 History of American Costume
214-680 Draping
214-617 Social-Psychological Aspects Clothing
214-581 Functional Clothing Design
214-685 Apparel Design Studio
214-402 Undergraduate Clothing and Textile Research
214-274 Apparel Manufacturing
214-568 Engineered Tailoring
214-605 International Tour to the Fashion Industries
214-639 National Study Tour to Fashion Industry
214-655 Recent Developments in Clothing and Textiles
214-666 Custom Tailoring
214-670 Theatrical Costume
214-695 Historic and Contemporary Fabrics

APPAREL MANUFACTURING

214-120 Introduction to Apparel, Textiles and Merchandising
214-140 Textiles
214-225 Clothing and Textile Industry
214-519 Textile and Clothing Economics
214-374 Apparel Manufacturing Laboratory
150-304 Principles of Business Management
354-530 Statistical Methods
214-550 Textile Evaluation
214-568 Engineered Tailoring
214-398 Fashion Merchandising Field Experience
214-375 Grading Apparel Patterns
150-514 Production Systems
214-266 Apparel Construction
214-402 Undergraduate Clothing and Textile Research
214-366 Pattern Adjustment and Fit
214-605 International Study Tour to the Fashion Industries
214-645 United States Textile Study Tour
214-650 Textile Science
214-666 Custom Tailoring
214-680 Draping
150-200 Production/Operations Management
150-600 Organizational Leadership
479-582 Human Resource Management
479-579 Public Relations
150-440 Plant Layout and Materials Handling

150-505 Product and Inventory Control
150-520 Quality Assurance
150-540 Time and Motion Study

TEXTILE DESIGN

214-120 Introduction to Apparel, Textiles and Merchandising
214-109 Applied Design for Family Living
214-110 Principles of Apparel Design
214-140 Textiles
214-225 Clothing and Textile Industry
214-519 Textile and Clothing Economics
214-695 Historic and Contemporary Fabrics
214-590 Practicum in Textile Design
214-693 Structural Design and Weaving
214-398 Fashion Merchandising Field Experience
214-610 History of Costume-Ancient to European or
214-611 History of American Costume
214-617 Social, Psychological Aspects of Clothing
214-6xx Textile Design Studio
214-690 Advanced Textile Design: Stitchery
214-691 Advanced Textile Design: Non-Loom
214-692 Advanced Textile Design: Hooking
214-694 Advanced Weaving Studio
214-591 Natural Dyeing and Hand Spinning
214-266 Apparel Construction

214-368 Experimental Clothing
 214-402 Undergraduate Clothing and Textile Research
 214-545 Textiles for Interiors
 214-550 Textile Evaluation
 214-366 Pattern Adjustment and Fit
 214-605 International Study Tour to the Fashion Industries
 214-639 National Study Tour to Fashion Industry
 214-645 United States Textile Study Tour
 214-650 Textile Science
 130-140 Graphic Arts
 304-100 Drawing I
 304-305 Presentation Techniques
 304-310 Graphic Design I
 304-500 Drawing II
 304-517 Printmaking I
 600-504 Elementary Photography

TEXTILE TECHNOLOGY
 214-120 Introduction to Apparel, Textile and Merchandising
 214-140 Textiles
 214-225 Clothing and Textile Industry
 215-419 Textile and Clothing Economics
 214-541 Fabric Maintenance
 354-530 Statistical Methods
 214-550 Textile Evaluation
 214-398 Fashion Merchandising Field Experience
 214-545 Textiles for Interiors
 214-650 Textile Science
 214-693 Structural Design and Weaving
 311-521 Textile Chemistry
 214-6xx Issues in Textile Research
 214-402 Undergraduate Clothing and Textile Research
 214-591 Natural Dyeing and Hand Spinning
 214-605 International Study Tour to the Fashion Industries

214-645 United States Textile Study Tour
 214-694 Advanced Weaving Studio
 214-695 Historic and Contemporary Fabrics
 245-658 Experimental Laundry Procedures
 214-655 Recent Developments in Clothing and Textiles
 311-201 Organic Chemistry Lecture
 311-203 Organic Chemistry Laboratory
 311-501 Physical Chemistry Lecture
 311-503 Physical Chemistry Laboratory
 311-531 Quantitative Analysis
 311-535 Instrumental Methods of Analysis
 326-347 Critical Writing
 326-515 Technical Writing for Home Economics
 326-525 Writing Technical Articles
 326-546 Research Reporting

DIETETICS

This program will provide the academic background for a career as a clinical dietitian, administrative dietitian or nutrition educator. This program meets academic requirements for membership in the American Dietetic Association (ADA). In a 1985 listing of occupations where shortages exist, the field of dietetics showed a 40 percent increase to 1995.

The dietetic student receives an education with equal emphasis on the following sciences: physical and biological; behavioral and social; communication and professional. With this balance, the student can move toward the more technical

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 132 credits
 Required in liberal studies 51 credits
 Required in major studies 66 credits
 Concentrations 15 credits
2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
3. Work experience must be obtained through participation in the Field Experience program.
4. Students must attain a grade of "C" or better in each of the courses within the Liberal Studies and Major Studies. Students must also maintain a 2.5 grade point average with Major Studies. Students will have until the second semester of their junior year to attain the 2.5 average. All transferred credits will meet this program requirement.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—51 credits required

Course	Credit
391-100, Fundamentals of Speech and Speech for Proficiency Exam* . . .	2
391-206, Discussion	2
391-208, Theory of Communication	3
391-204, Techniques of Group Leadership	2
391-512, Speech Skills for Educators	2
329-103, Elementary Spanish I	4
329-104, Elementary Spanish II	4
413-444, Introduction to Group Process	2
326-101, Freshman English: Composition*	3
326-102, Freshman English: Reading and Related Writing*	3
326-546, Research Reporting, or*	2
326-515, Technical Writing for Home Economics	3
355-123, Finite Mathematics with Applications, or*	4
xxx-xxx, Three years of high school academic mathematics	0
421-303, Educational Psychology*	2
242-201, Teaching Techniques in Home Economics or*	2
242-240, Clinical Experience in Micro-Teaching	1
242-341, Clinical Experience in Schools	1
242-241, Clinical Experience in the Community	1
600-560, Audio-Visual Communications*	2
229-606, Nutrition Education*	3
354-140, Concepts of Computer, or*	2
354-141, Digital Computer Programming	2
212-xxx, Any Human Development and Family Living Course	
387-110, Introductory Sociology*	3
214-617, Social-Psychological Aspects of Clothing	3
303-220, Introduction to Cultural Anthropology*	3

479-110, General Psychology*	3
338-xxx, Any History Course	3
320-210, Principles of Economics I*	3
375-210, Government, or*	3
375-220, State and Local Government*	3
375-310, Political Parties and Pressure Groups	3
375-320, Civil Liberties in the U.S.	3
375-260, Problems of American Foreign Policy	3
375-340, International Relations	3
311-125, Principles of Chemistry for Health Sciences,* or	5
311-135, College Chemistry I	5
311-201, Organic Chemistry Lecture*	3
311-203, Organic Chemistry Laboratory*	1
308-306, General Microbiology*	4
308-132, Physiology and Anatomy*	4
308-362, Advanced Psychology*	3
367-121, Exercise and Fitness*	1
367-xxx, Any Physical Education class*	5
311-511, Biochemistry*	4

Select 9 credits from three different areas of the following:*

- 304-xxx, Any Art course
- 326-xxx, Any Literature course
- 360-xxx, Any Music course, except 360-090, Stage Band
- 365-xxx, Any Philosophy course, except 365-301, Logic
- 391-232, Introduction to Theater or
- 391-334, Contemporary Theater
- 600-535, Film: History and Appreciation

MAJOR STUDIES—65 credits required

229-212, Nutrition*	3
229-240, Food Science*	4
229-410, Advanced Nutrition*	3
229-308, Meal Management*	3
229-618, Diet Therapy*	4
245-501, Food Service Administration*	3
245-311, Quantity Food Production*	3
245-222, Institutional Food Purchasing*	2
245-521, Food Service Equipment*	2
366-340, ARC Standard First Aid and Personal Safety*	2
150-304, Principles of Business Management*	3
479-582, Human Resource Management*	3
229-101, Dietetics as a Profession*	1
229-x98, Field Experience, or*	1
245-x98, Field Experience	1
354-130, Elementary Statistics, or*	2
354-530, Statistical Methods	3
229-638, Experimental Food*	3
229-661, Social and Cultural Aspects of Food*	2

Select at least one concentration of 15 credits from the following:

CLINICAL NUTRITION

- 229-505 Nutrition of the Aged
- 229-630 Food Behavior
- 229-633 Maternal and Child Nutrition
- 229-680 Community Nutrition
- 311-515 Food Chemistry
- 311-612 Advanced Biochemistry (for graduate school-bound students)
- 479-540 Psychology of Individual and Group Differences

COMMERCIAL DIETETICS

- 229-608 Advanced Meal Management Practicum
- 229-620 Food Styling
- 229-630 Food Behavior
- 229-642 Advanced Foods
- 245-685 Demonstration Techniques
- 326-525 Advanced Technical Writing
- 600-504 Elementary Photography

COMMUNITY NUTRITION

- 229-xxx Community Nutrition Programs
- 229-xxx Community Nutrition Practicum
- 229-505 Nutrition for the Aged

- 229-633 Maternal and Child Nutrition
- 229-680 Community Nutrition
- 375-220 State and Local Government (if not taken under 2.4.1)
- 375-310 Political Parties and Pressure Groups

CONSULTANT DIETETICS

- 160-206 Accounting I
- 130-180 Hospitality, Living and Institutional Facility Planning
- 150-450 Maintenance Management
- 229-620 Food Styling
- 242-240 Clinical Experience in Micro-Teaching
- 242-241 Clinical Experience in the Community
- 245-312 Restaurant Operational Management
- 245-371 Food, Beverage and Labor Cost Controls
- 413-444 Introduction to Group Process
- 229-505 Nutrition of the Aged
- 229-630 Food Behavior
- 229-680 Community Nutrition
- 245-621 Food Service Layout Analysis

FOOD SERVICE ADMINISTRATION

- 160-206 Accounting I
- 229-260 Menu Planning and Design
- 229-608 Advanced Meal Management Practicum
- 229-620 Food Styling
- 229-642 Advanced Foods
- 245-312 Restaurant Operational Management
- 245-371 Food, Beverage and Labor Cost Controls
- 245-621 Food Service Layout Analysis

GERIATRIC NUTRITION

- 212-351 Death and the Family
- 212-530 Adulthood and the Family
- 212-680 The Aging Person
- 229-505 Nutrition for the Aged
- 229-608 Advanced Meal Management Practicum
- 229-512 Clinical Experience in Elderly Nutrition Programs
- 229-630 Food Behavior
- 229-642 Advanced Foods
- 229-680 Community Nutrition
- 242-241 Clinical Experiences in the Community

NUTRITION AND FOODS COMMUNICATION (RADIO, TV)

229-620 Food Styling
229-680 Community Nutrition
242-240 Clinical Experience in Micro-Teaching or
245-685 Demonstration Techniques
391-244 Radio Program and Production or
391-554 TV Programming and Performance
600-561 Preparation of AV Materials
229-642 Advanced Foods

NUTRITION EDUCATION

229-505 Nutrition for the Aged
229-630 Food Behavior
229-633 Maternal and Child Nutrition
229-680 Community Nutrition
242-301 Home Economics Curriculum*
242-240 Clinical Experience in Micro-Teaching*
242-341 Clinical Experience in the Schools*
212-407 Parent Education/Involvement
242-350 Laboratory Techniques for Teaching and Learning in Home Economics
242-620 Vocational Programs in Home Economics
242-630 Concepts of Extension Education
245-685 Demonstration Techniques
For vocational certification:
413-501 Introduction to Guidance
199-502 Principles of Vocational, Technical and Adult Education

*Required for double major in Home Economics Education.

NUTRITION FACILITY PLANNING

140-587 Human Factors Engineering
130-xxx Advanced Hospitality Living and Institutional Facility Planning

130-180 Hospitality Living and Institutional Facility Planning
130-325 Architectural Design II (prerequisite waived)
130-526 Building Construction Specifications
170-570 Mechanical Systems
245-436 Commercial and Residential Lighting
245-621 Food Service Layout Analysis

PRENATAL, INFANT AND CHILD NUTRITION

212-124 Child Development I
212-264 Child Guidance
212-407 Parent Education/Involvement
212-524 Child Development II
229-405 Food Service Practicum for Child Care Centers
229-630 Food Behavior
229-633 Maternal and Child Nutrition
229-680 Community Nutrition

SECONDARY DIETARY EDUCATION

212-xxx Mini courses in Family Life
212-124 Child Development I
212-250 Individual and Family Relations
212-264 Child Guidance
212-350 Dynamics of Family Development
212-680 The Aging Person
214-109 Applied Design for Family Living
214-110 Principles of Apparel Design
214-140 Textiles I
214-266 Apparel Construction
242-101 Experiential Learning in Home Economics
242-444 Practicum in Teaching Home Economics

242-443 Clinical Seminar in Home Economics Education
245-250 Family Housing
245-275 Management of Family Resources
245-360 Consumer Economics
413-501 Introduction to Guidance
421-422 Principles of Secondary Education

SYSTEMS DIETETICS

254-141 Digital Computer Programming
354-xxx Computer Applications for Dietetics
354-240 Intermediate Computer Programming
354-241 Assembly Language Programming
354-341 Data Structures
355-153 Calculus I

VOCATION/FOOD SERVICE AND NUTRITION

229-620 Food Styling
242-240 Clinical Experiences in Micro-Teaching
242-301 Home Economics Curriculum
242-620 Vocational Programs in Home Economics
245-312 Restaurant Operational Management
413-501 Introduction to Guidance
421-641 Education Evaluation
199-502 Principles of Vocational, Technical and Adult Education

EARLY CHILDHOOD EDUCATION

This Early Childhood Education program provides students with the knowledge and skills needed for working with young children in educational settings. The prescribed courses meet the requirements for Nursery-Kindergarten teaching certification for the State of Wisconsin. A cooperative program with the University of Wisconsin-Eau Claire offers the opportunity for additional certification in grades 1-8.

The Early Childhood Education program places emphasis both on general education and preparation for a professional career. In the major studies, involvement with children and families begins the freshman year with observation/participation experiences in Stout's Child and Family Study Center, Day Care Facility, and/or Infant-Toddler laboratory. General education encourages exploration of a variety of fields of knowledge to provide educational experiences that will develop the ability to express one's self effectively, develop clear and critical thinking, and develop awareness of the great ideas and accomplishments of mankind.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 135 credits
Required in general education studies 49 credits
Required in major studies 86 credits
2. Cumulative G.P.A. of 2.50 is required for entrance to student teaching.
3. Upon entrance to student teaching, students must have on file a current physical health examination certificate and tuberculosis test.
4. Students in Early Childhood Education must demonstrate English composition and speech proficiency by earning a "C" or better in English 102 or its equivalent (or achieve a proficiency rating on an English proficiency test), and earn a "C" or better in 391-100, Fundamentals of Speech.

PROGRAM REQUIREMENTS

GENERAL EDUCATION STUDIES—49 credits required

General requirements—minimum of 16 credits

Course	Credit
326-101* Freshman English: Composition or Freshman English—Honors I	3
326-102* Freshman English: Reading and Related Writing or Freshman English—Honors II	3
391-100, Fundamentals of Speech*	2
479-110, General Psychology*	3
367-xxx, Any Physical Education Activity Course(s)*	1
355-118, Concepts of Mathematics* or	
355-120, Introductory College Mathematics I	4
<i>Select a minimum of 8 credits from: Biology 308-122, 132, 142, 152; Chemistry 311-115 or 135; Physics 372-251, 252, 254.</i>	

Select a minimum of 6 credits from: Political Science 375-210* or Anthropology 303-250, Economics 320-201, 320-210, Geography 336-104 or Sociology 387-110.

Select a minimum of 13 credits - Literature (minimum of 3 credits) 326-303, 348, 355, 360, 400, 401; History (minimum of 3 credits) 338-105, 120, 121, 140, 141; Language and Philosophy (minimum of 2 credits) 326-339, 328-101, 329-103, 365-201, 365-301, 300-255 and 100-500.

Select a minimum of 5 credits from Art, Music, Media, Speech, Theater including both academic and direct experience.

Electives to total 49 credits.

MAJOR STUDIES—minimum of 86 credits

Career Development—minimum of 1 credit

212-100, Introduction to Early Childhood Programs* 1

Developmental Processes, Health and Safety—minimum of 17 credits

212-124, Child Development I* 3

212-163, Adult-Child Interaction* 2

212-250, Individual and Family Relations* 3

479-451, Children's Learning* 3

431-532, Psychology of Exceptional Child* 2

229-136, Food for Young Children* 2

366-340, ARC Standard First Aid and Personal Safety* 2

Professional Education—minimum of 54 credits.

212-264, Child Guidance* 2

212-265, Child Guidance Practicum* 1

360-204, Music for the Young Child* 3

421-303, Educational Psychology* 2

367-265, Physical Activities for Preschool Children* 2

326-300, Literature for Young Children* 3

212-204, Teaching/Learning Strategies in Early Childhood** 5

212-168, Fostering Language Development in Young Children* 3

600-560, Audio Visual Communication* 2

212-342, Creative Activities For Young Children* 3

212-433, Reading in Early Childhood Education* 3

212-303, Curriculum I: Language Arts and Social Sciences—Early Childhood** 2

212-333, Science and Mathematics—Early Childhood Education** 2

212-545, Exceptional Needs and Programming—Early Childhood* 2

212-407, Parent Education/Involvement* 2

212-685, Seminar—The Culturally Distinct Child and Family* and 3

212-235, Child Development Laboratory* 1

212-408A, Student Teaching in Preschool Programs I 4

212-409, Clinical Seminar in Preschool Programs*5

212-408B, Student Teaching in Kindergarten I 4

212-411, Clinical Seminar in Kindergarten Education*5

212-420, Theories of Early Childhood Education* 2

212-665, Administration of Early Childhood Education Programs* 2

*Required courses with grade of "C" or better.

**Required major courses with a grade of "B" or better. If less than "B" is earned, the course must be repeated with a grade of "B" or better prior to student teaching.

¹Students must have a cumulative GPA of 2.50 for acceptance into student teaching and must make written application to the program director prior to the academic year in which the student plans to enroll for student teaching.

Electives—minimum of 14 credits

Students may use electives to fulfill requirements for one of the following concentrations: Supervision and Training; Day Care Programming; Kindergarten Education; Education of Children with Special Learning Needs; Administration; and Elementary Education Cooperative Program with University of Wisconsin-Eau Claire.

COOPERATIVE PROGRAM IN ELEMENTARY EDUCATION AND EARLY CHILDHOOD EDUCATION

A two-semester, 26.5-semester hour program permits Stout students in the N-K certification program to add 1-8 certification at UW-Eau Claire prior to graduation.

The following requirements may be met at either institution:

	UW-Eau Claire		UW-Stout
PSYC 334	Psychology of the Except-	ELED 380	Educational Media 2
or	ional Child 3	431-532	Psychology of the Excep-
SPED 400	Educational of Exceptional		tional Child 2
	Child 3	212-250	Individual and Family Re-
SOC 301	Marriage and Family		lations (Elective) 3
	(Elective) 3	212-124	Child Development I 3

Psyc 331	Child Psychology	3	326-300	Literature for Young Children	3
LMED 205	Children's Literature	2		Music for the Young Child	3
MUSI 240	Music in the Elementary School	2	360-204 600-560	A-V Communication	2
<i>The following requirements must be take at UW-Eau Claire:</i>					
Semester I					
ELED 306	Methods in Math	2			
ELED 307	Methods in Language Arts	2			
ELED 308	Methods in Science	2			
ELED 309	Methods in Social Studies	2			
ELED 310	Methods in Reading	3			
MATH 206	Math for Elementary Teachers	4			
		15			credits
Semester II					
ELED 330	Diagnosis and Remediation of Reading Problems	3			
ELED 321	Evaluation in the Elementary School	2			
ELED 435	- ELED 436, or both—Student Teaching	3			(minimum)
		8			credits

FASHION MERCHANDISING

Fashion Merchandising is a four-year program designed to prepare students for entry into the retail department store specialty and/or low margin store business. Program requirements are structured to provide the student with specific retailing skills and comprehension; broad knowledge of general business in areas such as marketing, accounting, economics and advertising; and self-growth through a variety of liberal studies such as mathematics, humanities, social sciences, English, science and communications. In addition to a Fashion Merchandising major, the program includes a minor in business, with the potential for a second major or second minor utilizing the free elective allowances.

Career possibilities available to Fashion Merchandising majors are limited only to the individual's capabilities. But a typical, not exclusive, broad list would include: group manager, store manager, buyer, divisional merchandise manager, resident buyer, director of personnel, promotion-publicity manager, fashion director and operations manager. There is little limitation to type of merchandise, which typically includes: apparel, gifts-china, fashions for the home such as interiors and domestics, shoes, cosmetics, furniture, fabrics, and entertainment centers. Independent study projects or transfer requirements must have approval of the program director.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in liberal studies	54-59 credits
Required in major studies	63-64 credits
Electives	8-15 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—54-59 credits required

COMMUNICATION SKILLS CLUSTER (GPA 2.5)

326-101, Freshman English: Composition	Credit 3
326-102, Freshman English: Reading and Writing	3
326-any, Writing	3
391-100, Fundamentals of Speech	2
<i>Select 2-4 credits from the following:</i>	
391-200, Persuasive Speaking	2
391-206, Discussion	2
391-210, Interpersonal Speech Communication	2
391-508, Speech Skills for Business and Industry	2

GENERAL STUDIES CLUSTER

338-xxx, History or	
375-xxx, Political Science	3
387-110, Introduction to Sociology	3
326-xxx, Any Literature	3
304-101, Fundamentals of Design	3
304-xxx, Any Art	2-3
366- or 367, Physical Education	2
479-110, General Psychology	3
<i>Select 2-4 credits</i>	
391-232, Introduction to Theater	3
360-xxx, Music	1-2
328-xxx, French	4
329-xxx, Spanish	4
<i>Select 3 credits</i>	
212-250, Individual and Family Relations	3
303-xxx, Anthropology	3
365-xxx, Philosophy	3
<i>Select 4-5 credits</i>	
308-xxx, Biology	2-4
311-115, Chemistry	5

MAJOR STUDIES—63-64 credits required

RETAIL CLUSTER (GPA 2.5 - Min. 2.0 in each course)

214-398, Fashion Merchandising Field Experience	2
---	---

214-120, Introduction to Apparel/Textiles/Merchandising	2
214-227, Basic Merchandising	3
214-327, Ready-to-Wear Merchandising	2
214-329, Fashion Merchandising Promotion	3
214-430, Merchandising Planning and Control	3
214-525, Mens and Boys Merchandising	1
214-625, Mass Merchandising	3
214-527, Store Management	3
214-426, Fashion Merchandising Practicum	3

RETAIL RELATED BUSINESS CLUSTER (GPA 2.5)

320-210, Principles of Economics I*	3
320-215, Principles of Economics II*	3
160-206, Accounting I	3
160-207, Accounting II	3
150-304, Principles of Business Management	3
160-330, Principles of Marketing	3
160-334, Salesmanship and Sales Management	3
160-370, Principles of Advertising	3
<i>Select 2 courses from the following:</i>	
150-600, Organizational Leadership	3
479-579, Public Relations	2
479-582, Human Resource Management	3

RETAIL RELATED CLUSTER

214-110, Principles of Apparel Design	1
214-140, Textiles	3
214-225, Clothing and Textiles Industry	3
214-610, History of Costume: Ancient to European or	3
214-611, History of American Costume	3
214-617, Social-Psychological Aspects of Clothing	3
245-360, Consumer Economics	3
355-xxx, Math (but not 010-116)*	4

*Represents 10 credits of Liberal Studies

ELECTIVES—8-15 credits required

Electives are selected from courses approved at Stout, or those approved for transfer. Special options are available, including a semester in London, semester internships, study tours during spring break, and other special activities designed to add to academic and personal growth.

FOOD SERVICE ADMINISTRATION

This program meets academic requirements for membership in the American Dietetic Association (ADA).

The program in Food Service Administration provides the academic background for a career as an administrator in large quantity food production and service facilities. Areas in which a food service administrator would be concerned in serving nutritional diets to large groups of people (100 or more) are: industrial feeding; airline feeding; school food service; university food service; nursing home and hospital food service; day care and geriatric centers; fast food service; commissary food production; vending food operation; and supermarket management. Concentrations available in non-traditional employment are: Food Service Equipment Design, Food Service Equipment Manufacturing, Food Service Equipment Marketing and Sales, and Food Service Facility Planning.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 133-134 credits
Required in general studies 64-70 credits
Required in major studies 68 credits
Electives 15-16 credits
2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
3. Work experience must be obtained through participation in the Field Experience program.
4. Students must attain a grade of "C" or better in each of the courses within Liberal Studies, Major Studies and concentrations. These requirements also apply to transfer credits.

PROGRAM REQUIREMENTS

GENERAL STUDIES—68-73 credits required

Course	Credit
391-100, Fundamentals of Speech and Speech Proficiency Exam*	2
391-206, Discussion	2
391-208, Theory of Communication	3
391-204, Techniques of Group Leadership	2
391-512, Speech Skills for Educators	2
329-103, Elementary Spanish I	4
329-104, Elementary Spanish II	4
413-444, Introduction to Group Processes	2

326-101, Freshman English: Composition* or	3
326-111, Honors English	3
326-102, Freshman English: Reading and Related Writing* or	3
326-112, Honors English	2
326-546, Research Reporting* or	3
326-515, Technical Writing for Home Economics*	4
355-120, Introductory College Mathematics* or	0
xxx-xxx, Three years of high school academic mathematics*	2
421-303, Educational Psychology*	2
242-201, Teaching Techniques in Home Economics or*	1
242-240, Clinical Experience in Micro-Teaching	1
242-341, Clinical Experience in Schools	1
242-241, Clinical Experience in the Community	2
600-560, Audio-Visual Communications*	2
354-140, Computer Concepts* or	2
354-141, Digital Computer Programming	2
354-130, Elementary Statistics or	2
354-530, Statistical Methods	2
212-xxx, Any Human Development and Family Living Course	3
387-110, Introductory Sociology*	3
214-617, Social-Psychological Aspects of Clothing	3
303-xxx, Any Anthropology*	3
479-110, General Psychology*	3
338-xxx, Any History course	3
320-210, Principles of Economics I*	3
320-215, Principles of Economics II*	3
320-420, Labor Economics*	3
375-210, Government* or	3
375-310, Political Parties and Pressure Groups* or	3
375-320, Civil Liberties in the United States*	5
311-125, Principles of Chemistry for Health Sciences	3
311-201, Organic Chemistry Lecture*	1
311-203, Organic Chemistry Lab*	4
308-306, General Microbiology*	4
308-132, Physiology and Anatomy*	3
229-212, Nutrition* (*)	
*Required Courses	
(*) 311-201, Organic Chemistry and 308-132, Physiology and Anatomy, prerequisites.	
<i>Select 9 credits from three different areas of the following*</i>	
304-101, Fundamentals of Design	3
326-xxx, Any Literature course	
360-xxx, Any Music course, except 360-090, Stage Band	
365-xxx, Any Philosophy course, except 365-301, Logic	
391-232, Introduction to Theater or	
391-334, Contemporary Theater	
600-535, Film: History and Appreciation	
367-xxx, Physical Education (Activity)	
MAJOR STUDIES—45-47 credits required	
229-101, Dietetics as a Profession*	1
229-240, Food Science* (*)	4
245-311, Quantity Food Production*	3
229-661, Social and Cultural Aspects of Food*	2
229-308, Meal Management*	3
245-312, Restaurant Operational Management*	3
229-260, Menu Planning and Design*	2
245-x98, Field Experience*	2
245-222, Institutional Food Purchasing*	2
245-371, Food, Beverage and Labor Cost Controls*	2
245-501, Food Service Administration*	3
245-521, Food Service Equipment*	2
245-656, Microwave Oven*	2
160-206, Accounting I*	3
160-207, Accounting II*	3
160-318, Business Law I	3
160-330, Principles of Marketing*	3
150-304, Principle of Business Management*	3
479-582, Human Resource Management*	3
366-340, ARC Standard First Aid and Personal Safety*	2
*Required courses	
(*) 311-201, Organic Chemistry, prerequisite	

CONCENTRATIONS:

FOOD SERVICE EQUIPMENT DESIGN

130-110 Drafting or
130-311 Technical Drafting
130-513 Technical Rendering
170-205 Design for Industry
304-330 Industrial Design I
304-340 Industrial Design II
245-6xx Food Service Analysis Seminar

FACILITY PLANNING

130-180 Hospitality, Living and Institutional Facility Planning
140-587 Human Factors Engineering

130-526 Building Construction Specifications
170-570 Mechanical Systems
245-436 Residential and Industrial Lighting or
214-109 Applied Design in Family Living or
214-545 Commercial and Household Textiles
130-325 Architectural Design II
245-621 Food Service Layout Analysis

FOOD SERVICE EQUIPMENT MANUFACTURING

130-110 Drafting or
372-xxx Physics for Home Economics

170-202 Metals
170-250 Plastics I
170-209 General Finishing
245-6xx Food Service Analysis Seminar

FOOD SERVICE EQUIPMENT MARKETING AND SALES

130-180 Hospitality, Living and Institutional Facility Planning
160-334 Salesmanship and Sales Management
160-370 Principles of Advertising
160-679 Marketing Research
245-6xx Food Service Analysis Seminar

ELECTIVES—15-16 credits required. *Select from courses offered at Stout or those approved for transfer.*

HOME ECONOMICS IN BUSINESS

Home Economics in Business is a four-year program leading to a Bachelor of Science degree. The goal of this program is to develop competencies which will enable a person to function effectively as a member of a business organization. This task is accomplished by a combination of classes from Liberal Studies, Major Studies, General Electives and/or Minor.

Liberal Studies provides broad learning experiences in art, science, English, mathematics and the behavioral sciences. The courses taken in Major Studies depend on the concentration chosen. The five concentrations from which a student may select are: Food and Beverage Merchandising, Foods/Equipment, Food Science, Consumer Affairs or Interior Decorating. The number of elective credits varies depending on the number of credits required to complete the concentration. These electives can be used to expand knowledge in an area of interest, explore selected disciplines or to complete a Minor.

The Home Economics in Business program prepares individuals for various careers in business and public service in areas such as public relations, banking and finance, sales, food processing, food pureeing, home equipment manufacturing, supermarket management, journalism and interior decoration.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	128 credits
Required in general studies	64-68 credits
Required in major studies (depending on concentration)	38-56 credits
Electives or minor	5-26 credits

PROGRAM REQUIREMENTS

GENERAL STUDIES—65-68 credits required

Course	Credit
For all concentrations:	
*212-115 Introduction to Home Economics in Business	1
*212-... Senior Seminar in Home Economics in Business	2
For Consumer Affairs and Interior Decorating: (one Laboratory course must be included)	
308-... Biology	5
311-... Chemistry	5
372-... Physics	5
For Food and Beverage Merchandising, Foods/Equipment and Food Science:	
311-125 Principles of Chemistry for Health Sciences or	5
311-135 College Chemistry I	5
For all concentrations:	
320-201 General Economics or	3
320-210 Principles of Economics I	3
(320-210 is required for Consumer Affairs)	
326-101 Freshman English-Composition or	3
326-111 Freshman English-Honors I	3
326-102 Freshman English-Reading & Related Writing or	3
326-112 Freshman English-Honors II	3
*326-346 Expository Writing	3
*391-100 Fundamentals of Speech	2
*391-508 Speech Skills for Business and Industry	2
For Foods/Equipment, Food Science and Consumer Affairs:	
355-120 Introductory College Mathematics I	4
354-141 Digital Computer Programming or	2
Any more advanced computer course (2-4 credits)	
For Food and Beverage Merchandising and Interior Decorating:	
355-119 Business Mathematics	4
*354-141 Digital Computer Programming or	2
Any more advanced computer course (2-4 credits)	
For all concentrations: (Select 3-4 credits)	
326-348 American Literature	3
326-360 Modern American Literature	3
326-372 Women Writers	3
326-381 Recent American Literature	3
328-329 Any Foreign Language	4

<i>Select 2 credits:</i>	
366-367 Any Health or Physical Ed. (Must include physical activity)	2
<i>Select 3 credits:</i>	
365-201 Introduction to Philosophy	3
365-301 Introduction to Logic	3
365-375 Personal and Professional Ethics	3
365-550 Ethical Valuing	3
<i>Select 3 credits:</i>	
338- . . . Any History course	3
375- . . . Any Government Course	3
<i>Select 3 credits:</i>	
304- . . . Any Art Course	
360- . . . Any Music Course	
391- . . . Theatre	
600- . . . Media	
<i>Select 6 credits:</i>	
212-250 Individual and Family Relations	3
303-220 Introduction to Cultural Anthropology	3
387-110 Introductory Sociology	3
479-110 General Psychology	3
<i>Select 12-13 credits from those offered:</i>	
*160-206 Accounting I	3
*160-330 Principles of Marketing	3
*150-600 Organizational Leadership	3
<i>Select one of the following: (3-4 credits)</i>	
479-582 Human Resource Management or	3
320-420 Labor Economics or	3
479-483 Human Resource Development and	2
320-421 Collective Bargaining and Labor Relations	2
<i>Select any course from the 300 series</i>	
MAJOR STUDIES —Courses will be selected according to concentration(s) chosen.	

CONCENTRATIONS—44-60 credits required

To complete the program, a student selects one or more concentrations. Five concentrations are available:

FOOD and BEVERAGE MERCHANDISING		
229-124 Foods or	229-638 Experimental Foods	CONSUMER AFFAIRS
229-240 Food Science	229-642 Advanced Foods	
245-222 Institutional Food Purchasing	229-661 Social and Cultural Aspects of Food	Required 28 credits
200- . . . History and Appreciation	245-311 Quantity Food Production	140-590 Products Liability
Wines, Spirits	308-306 General Microbiology	212- . . . Human Development
245-311 Quantity Food Production	308-506 Food Microbiology	242-201 Teaching Techniques in Home Economics
Hotel and Restaurant	311-201 Organic Chemistry Lecture	245-360 Consumer Economics
Accounting	311-203 Organic Chemistry/Laboratory	245-662 Consumer Protection
229-212 Nutrition	372-211 Introduction to Physics	245-663 Consumer Law
245-521 Foodservice Equipment	245-250 Family Housing	320-215 Economics II
245- . . . Food and Beverage	245-355 Energy and Household Equipment	320-325 Economics and Business Statistics
Purveying Systems	245-521 Food Service Equipment	326-306 Reporting and News Writing or
160-334 Salesmanship and Sales Management or	245-655 Major Kitchen Appliances	326-346 Expository Writing or
214- . . . Visual Merchandising	245-656 Microwave Oven	326-347 Critical Writing
160-370 Principles of Advertising	245-685 Demonstration Techniques	326-425 Copy Editing and Preparation
170-280 Packaging Fundamentals		479-579 Public Relations
229-650 Food Processing	FOOD SCIENCE	<i>Select 3 credits from the following:</i>
320-215 Principles of Economics II	170-280 Packaging Fundamentals	160-334 Salesmanship and Sales Management
308-206 Food Service and Environmental Sanitation	372-211 Introduction to Physics	160-370 Principles of Advertising
245-x98 Field Experience	308-132 Physiology and Anatomy	160-679 Marketing Research
<i>Select 3 credits from the following:</i>	308-306 Microbiology	Specific Consumer areas (each student will complete credits in two of the following areas:)
160-318 Business Law I or	308-506 Food Microbiology	<i>Clothing and Textiles</i> - 16 credits
160-355 Principles of Risk Management or	311-201 Organic Chemistry	214-140 Textiles
245-625 Hospitality Industry Law and Liability	311-203 Organic Chemistry/Laboratory	214-519 Textile and Clothing Economics
<i>Select one of the following:</i>	229-212 Nutrition	214-541 Fabric Maintenance
160-340 Business Finance or	229-240 Food Science	214-550 Textile Evaluation
245-670 Hospitality Financial/Budget/Forecasting	311-511 Biochemistry	214-617 Social/Psychological Aspects of Clothing
FOODS/EQUIPMENT	229-410 Advanced Nutrition	214-650 Textile Science or
229-124 Foods or 229-240 Food Science	229-446 Food Preservation	311-521 Textile Chemistry
229-212 Nutrition	229-638 Experimental Foods	In General Task areas take:
229-308 Meal Management	229-642 Advanced Foods	311-115 General Chemistry I
229-446 Food Preservation	229-650 Food Processing	<i>Economics Institutions</i> - 13 credits
229-620 Food Styling	245-211 Quantity Food Production	245-565 Consumer Aspects of Life Insurance
	311-515 Food Chemistry	
	311-531 Quantitative Analysis	
	311-535 Instrumental Methods of Analysis	

245-566 Consumer Aspects of Health Insurance
 245-660 Consumer Credit
 245-676 Family Finance
 320-335 Personal Securities Investment
 320-435 Money and Banking
 320-445 Public Finance
 In General Task areas take:
 355-120 Introductory College Mathematics I
Food and Nutrition - 14-16 credits
 229-124 Foods
 229-212 Nutrition
 229-650 Food Processing
Select one of the following courses:
 229-630 Food Behavior or
 229-661 Social/Cultural Aspects of Food
Select one of the following courses:
 229-505 Nutrition for the Aged or
 229-633 Maternal and Child Nutrition or
 229-680 Community Nutrition
 In General Task areas take:
 311-115 General Chemistry I
Energy and Equipment - 13-14 credits
 245-355 Energy and Household Equipment

245-6567 Microwave Oven
 320-450 Energy Economics
Select one of the following courses:
 245-521 Foodservice Equipment
 245-655 Major Kitchen Appliances
Select one of the following courses:
 170-372 Heating and Air Conditioning
 245-... Energy Management in the Home
 In General Task areas take:
 372-211 Introduction to Physics
Habitat - 13 credits
 245-250 Family Housing
 245-350 Social/Psychological Aspects of Housing
 245-... Housing Economics and Policy
Select 3 credits from the following:
 245-436 Commercial and Residential Lighting
 245-455 Kitchen Planning
 245-681 Special Problems in Habitational Resources
 245-... 99 Independent Study
 In General Task areas take:
 372-211 Introduction to Physics

INTERIOR DECORATING

304-100 Drawing I
 304-101 Fundamentals of Design
 130-221 Architectural Design I (130-110)
 245-250 Family Housing
 245-436 Commercial and Residential Lighting (Fall only)
 304-202 Introduction to Art (Fall only) or
 304-522 Modern Art (Fall only)
 304-204 Interior Design (304-101)
 304-205 Problems in Interior Design (304-204)
 304-305 Presentation Techniques
 304-503 Design (304-401)
 304-532 Economics of House Furnishings (Fall only)
 304-533 Period Furnishings (Fall only)
 214-140 Textiles
 214-227 Basic Merchandising (214-120)
 214-330 Home Furnishing Merchandising
 214-430 Merchandising Planning & Control
 214-527 Store Management
 214-545 Textiles for Interiors
 160-334 Salesmanship and Sales Management
 *Required courses

ELECTIVES—5-26 credits required

HOME ECONOMICS EDUCATION

The B.S. degree in Home Economics Education opens career options in a variety of educational settings. It is a certification program that prepares students to teach in a middle school, junior high school or senior high school. In addition, it prepares students as Extension Agents and 4-H Youth Agents. Vocational/technical school teaching provides yet another focus of preparation and opportunity for Home Economics Education majors. Diversified home economics courses form a large portion of the program's academic work. The program consists of major studies, liberal studies and professional studies components. Through wise use of electives, there is opportunity to build minors and/or concentrations. Cooperatively planned work experiences can be used in the program to strengthen credentials for certification.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 135 credits
 Required in liberal studies 44 credits
 Required in major studies 54 credits
 Required in professional studies 27 credits
 Electives 10-11 credits
2. There are four planning systems which encourage individualized education and allow for maximum flexibility within the guidelines for a certifiable program of 135 credits. When planning the sequence of experiences leading to the Bachelor of Science degree with a major in Home Economics Education, the student should select and organize the classes within one of four planning systems. Depending on the program selected by the student, elective credits can be used to obtain a minor (22 credits) or concentration (10-18 credits) within a certain area. A combination of a minor and a concentration is also possible, but may require additional time beyond the usual four years.
3. To qualify for student teaching, the candidate must fulfill the English adequacy, the speech proficiency and the health requirements and must have a minimum cumulative grade point average of 2.25.
4. Concentrations:

APPAREL, TEXTILES AND DESIGN - Preparation for teaching semester or occupation-oriented courses at secondary and post-secondary levels.

AVOCATIONAL INTERESTS - Preparation for employment in schools, community programs, craft schools, workshops, campus, hospitals, special projects for the aged and other interest groups related to Home Economics knowledge and skills.

CAREER DEVELOPMENT - Provides teachers wider employment opportunities in working with Career Development either at secondary level or as an elementary consultant.

CONSUMER EDUCATION - Preparation for teaching semester courses and gives greater depth in teaching consumer education.

EXTENSION AND COMMUNITY SERVICES - Preparation for

employment in cooperative extension education and teaching in varied community programs.

FAMILY LIFE AND CHILD DEVELOPMENT - Preparation for teaching specialized courses at elementary, middle, secondary and post-secondary levels. Fulfills one of the greatest contemporary needs in education. Opportunities open for both men and women.

FOOD SERVICE AND NUTRITION - Popular with both men and women. Preparation for teaching semester or occupational-oriented courses at secondary and post-secondary levels.

HABITAT, EQUIPMENT AND MANAGEMENT - Preparation of men and women to teach semester courses or become employed in business and industry. Leads to further graduate work.

INDIVIDUALLY DESIGNED - The student in consultation with the program adviser design the concentration to meet individual needs.

MIDDLE SCHOOL - Certifiable program for teaching Home Economics in the middle school.

OCCUPATIONAL-ORIENTED EDUCATION - Preparation of men and women to teach occupation-oriented programs in secondary and post-secondary schools.

REHABILITATION - Provides opportunities of employment for teaching Home Economics to the handicapped.

SPECIAL FIELDS - Certifiable program for education of the slow learner in Home Economics.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—44 credits required

Course	Credit
304-xxx, Art elective	3
308-132, Physiology and Anatomy	4
311-115, Introductory College Chemistry or	5
311-135, College Chemistry I	5
320-201, General Economics	3
326-101 Freshman English: Composition or	
326-111 Freshman English-Honors I	3
326-102 Freshman English: Reading and Related Writing or	
326-112 Freshman English-Honors II	3
326-xxx, English elective	3
367-1xx, Physical Education elective	2
387-110, Introductory Sociology or	3
303-220, Introduction to Cultural Anthropology	3
391-100, Fundamentals of Speech	2
479-110, General Psychology	3
<i>Select any 3-credit course in History or Government</i>	3
Liberal Studies electives	7

MAJOR STUDIES—54 credits required

212-264, Child Guidance	2
212-124, Child Development I	3
212-250, Individual and Family Relationships	3
212-350, Dynamics of Family Development	3
212-xxx, Family Life elective	1
214-110, Principles of Apparel Design	1
214-140, Textiles I	3
214-266, Apparel Construction	3
214-109, Applied Design for Family Living	2
229-124, Foods	4
229-212, Nutrition	3
229-308, Meal Management	3
245-275, Management of Family Resources	3
245-250, Family Housing	3
245-360, Consumer Economics	3
245-xxx, Any Equipment Course	2-3
Major Studies electives (minimum)	12

PROFESSIONAL EDUCATION—24-27 credits required

242-241, Clinical Experience in the Community	1
242-101, Experiential Learning in Home Economics	1
242-201, Teaching Techniques in Home Economics	2
242-240, Clinical Experiences in Micro-Teaching	1
242-341, Clinical Experiences in Schools	1
242-301, Home Economics Curriculum	3
242-443, Clinical Seminar in Home Economics Education	2
242-444, Practicum in Teaching Home Economics or	6
242-488, Internship Teaching	8
413-501, Introduction to Guidance or	2
421-590, Mental Health in Schools	2
421-303, Educational Psychology or	2
421-422, Principles of Secondary Education	2
431-630, Mainstreaming Special Students	3
421-682, Reading Methods-Secondary School	2

ELECTIVES—11-13 credits required from courses offered at Stout or those approved for transfer.

HOME ECONOMICS GENERAL

The Home Economics General program serves a dual purpose: it provides a temporary major for the student who is undecided which of the nine career-specific programs to choose; it provides a degree granting program for the Home Economics student who shows high leadership potential and who is not concerned with a curriculum designed to meet career-specific needs.

GENERAL REQUIREMENTS—TEMPORARY MAJOR

A student who is undecided about which program to choose works with an adviser from the School of Home Economics in selecting course work. The student must select a career-specific program before the end of the sophomore year.

GENERAL REQUIREMENTS—B.S. DEGREE PROGRAM MAJOR:

Each student admitted to pursue the degree program will plan an individualized curriculum. The student will be admitted to Home Economics General. At the end of a year and a half, the student will be eligible to apply for admittance to the degree program. The student will fill out a formal application which will be reviewed by the Program Director and the Home Economics General Program Committee. Each student applicant will be interviewed by the committee. The committee will decide which applicants will be admitted to the degree program.

Total for graduation	128 credits
Required in liberal studies	50 credits
Required in major studies	44 credits
Required in leadership component	10 credits
Electives and/or minor	24 credits

LIBERAL STUDIES—50 credits required

391-100, Fundamentals of Speech	2
326-101, Freshman English: Composition	3
326-102, Freshman English: Reading and Related Writing	3
355-xxx, Mathematics	4
(Required only if high school background did not include two years of college-oriented math.)	

Select the remaining credits 38-42 from the following categories:

Humanities 8-10 credits. Choose from the following: English Literature, Foreign Language (Literature), History, Art History and Art Appreciation, Music Appreciation or Theory, Philosophy, and Introduction to Theater.

Natural Sciences and Mathematics 8-10 credits. Choose from the following: Biology, Chemistry, Mathematics, and Physics.

Social Sciences 12-14 credits. Choose from the following: Anthropology, Economics, Political Science, Psychology, and Sociology.

Arts 8-10 credits. Choose from the following: Art, Advanced and Creative Writing, Music (performance courses), Modern Dance, and Speech (Oral Interpretation and Theater).

MAJOR STUDIES—44 credits required

Family is the central concern of all Home Economists. The knowledge and skills developed in Home Economics courses can be conceptualized by examining the family and its immediate physical environment in a tangible, dynamic context. Course work for this component is described in terms of People, Habitat and Interaction:

People—The study of individuals and their development in families as discussed in applied course work that builds on knowledge gained in General Education courses. Course work dealing with family formation, development of children, adult development, family structure and family roles would be appropriate.

Habitat—The study of the material context of family life—food, textiles, furnishings, housing, and equipment. Course work on the immediate physical environment—territories, food, textiles, furnishings, equipment, housing and their relationship to the larger environment would be appropriate.

Interaction—The study of action and reactions that constitute the process of interaction between family members and the near environment. Course work in family relationships, decision-making and conflict resolution, leisure, work and ceremonial or symbolic events.

LEADERSHIP COMPONENT—10 credits required

Students are required to select one course from Groups A, B, and C and both courses in Group D.

(A) Understand the Characteristics of Individuals and Groups

212-535, Seminar on Self-Growth	2
387-250, Social Psychology	3

(B) Utilize Communication Skills

326-515, Technical Writing for Home Economics	3
391-200, Persuasive Speaking	2
391-208, Theory of Communication	2
391-508, Speech Skills for Business and Industry	3
391-206, Discussion	2

(C) Utilize Leadership Techniques

391-204, Techniques of Group Leadership	2
479-570, Assertiveness Training Procedures	2
500-100, Applied Student Leadership	2
150-600, Organizational Leadership	3
300-225, Creative Problem Solving	2

(D) Demonstrate Leadership in Home Economics

200-x99, Independent Study5
200-299, Independent Study in Home Economics	1-2

ELECTIVES AND/OR MINOR—24 credits required

HOTEL AND RESTAURANT MANAGEMENT

Hotel and Restaurant Management is one of America's fastest growing industries. Each year, the amount of leisure time increases for thousands of Americans, and with that increase, comes a growing demand on the hospitality industry. As existing lodging and dining facilities expand, new businesses are being started to accommodate more and more people who want new and better hospitality services.

Stout's specialized mission enables Hotel and Restaurant Management majors to receive a variety of training. The four-year curriculum is structured to allow for both practical and theoretical training, giving students specific skills needed to have successful management careers. The program also provides studies in the liberal arts to give graduates a flexible background, enabling them to adapt to a wide variety of situations in today's rapidly changing society.

GENERAL REQUIREMENTS—B.S. DEGREE:

- | | |
|-----------------------------------|---------------|
| 1. Total for graduation | 131 credits |
| Required in liberal arts | 53-54 credits |
| Required in professional studies | 57-58 credits |
| Electives in professional studies | 15 credits |
| Electives | 3 credits |
- The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
 - Work experience must be obtained through participation in the Field Experience program during the junior year and/or the summer between the junior and senior year. A minimum of 2 credits for 320 hours of approved work experience is required.
 - Students must attain a grade of "C" or better in each of the courses within the program except the three credits of electives. It is recommended that an "F" or "D" grade be repeated the following semester. In order for transfer courses to be accepted in the program, this same grade requirement must be met.

PROGRAM REQUIREMENTS**LIBERAL ARTS—53-54 credits required**

Course	Credit
Required: (26-27 credits)	
320-210 Principles of Economics I	3
375- Any Political Science or	
320- Any Additional Economics	3
320-325 Economics and Business Statistics or	
354-130 Elementary Statistics	2-3
326-101 Freshman English: Composition	3
326-102 Freshman English: Reading and Related Writing	3
355-119 Business Mathematics or	
355-123 Finite Mathematics with Applications (based upon results of UW System Math Placement Test)	4
355-120 College Mathematics or Higher	4
366-340 First Aid and 366 or 367	2
391-100 Fundamental of Speech	2
Select 2 credits from the following:	2
391-210 Interpersonal Speech	
212-535 Seminar on Self Growth	
391-208 Theory of Communication	
Select 4-6 credits from the following (must include one laboratory experience)	4-6

308- Biology	
311- Chemistry	
372- Physics	
<i>Select three credits from the following</i>	3
479-110, General Psychology	
479-150, Humanistic Psychology	
479-281, Environmental Psychology	
<i>Select three credits from the following</i>	3
212-250, Individual and Family Relations	
303-220, Cultural Anthropology	
387-110, Introductory to Sociology	
<i>Select 5 credits from at least two of the following areas</i>	5
304- Art History	
304- Art	
326- Literature	
328, 329-	
338- History	
360- Music (non-performance)	
500- Interdisciplinary Studies	
<i>Select 3 credits from the following:</i>	3
336-104 World Geography	
338-120 Early United States History	
338-121 Modern United States History	
<i>Select 3 credits from the following:</i>	3
365-301 Introduction to Logical Thinking	
365-375 Professional Ethics	
365-550 Ethical Valuing	
<i>Select 3 credits from the following:</i>	
326-320 Business Writing	
326-346 Expository Writing	
326-347 Critical Writing	
<i>Electives:</i>	
<i>Select 3 additional credits from any department within the University.</i>	

PROFESSIONAL STUDIES REQUIRED*

Operational Management: (37 credits)	
130-180, Hospitality Facility Planning	2
150-450, Maintenance Management	2
160-318, Business Law I	3
229-124, Foods	4
229-308, Meal Management	3
245-100, The Role of Management in the Hospitality Industry	2
245-222, Institutional Food Purchasing	2
245-240, Introduction to Tourism and the Travel Industry	2
245-311, Quantity Food Production	3
229-550, Fast Food Operations or	
245-312, Restaurant Operational Management	3
245-341, Tourism Goods and Services or	3
245-344, Hospitality Marketing and Sales	3
245-498, Field Experience	2
245-600, Integrated Management Systems-Hospitality	2
245-625, Hospitality Industry Law and Liability	3
308-206, Food Service and Environmental Sanitation	1
<i>Select from 3 different departments</i>	
H & R Electives— <i>Select 15 credits from the following: (No duplications from other sections)</i>	15
160- Any Business Administration	1-3
229-202 Fundamentals of Nutrition	2
229-260 Menu Planning and Design	2
229-305 Baking Processes	1
229-550 Fast Food Operations	3
229-620 Food Styling	2
229-661 Social and Cultural Aspects of Food	2
245-201 Hospitality Housekeeping Management	2
245-202 Front Office Management	3
245-301 Bar Management	2
245-312 Restaurant Operational Management	3
245-340 Development of Tourism Attractions	3
245-414 Haute Cuisine	3
245-515 Lodging Administration	3

245-521	Food Service Equipment	2
245-640	Psycho-social Dimensions of Tourism	3
245-645	Geography of Tourism	3
245-656	Microwave Oven	2
300-101	Computer Literacy	2
354-141	Digital Comp. Programming	2
600-580	Microcomputer Applications Word/Data	2
600-640	Telecommunications Systems and Teleconferencing	2
Other courses as approved by Program Director		

Personnel Management: (9 credits)

245-205	Hospitality Organization Management	3
<i>Select 6 credits from the following:</i>		
245-626	Hospitality Industry Employee and Labor Relations	2
150-600	Organizational Leadership	3
479-582	Human Resource Management	3

Financial Management: (12 Credits)

160-206	Principles of Accounting I	3
245-370	Hotel and Restaurant Accounting	3
245-371	Food, Beverage and Labor Cost Controls	3
245-670	Hospitality Financial Analysis Budget Forecasting	3

*Grade Requirement - All courses require a grade of "C" or better except the three additional electives from any department of the University.

Students must maintain a 2.5 grade point average within major studies. Students will have until second semester of sophomore year to attain a 2.5 average.

SCHOOL OF LIBERAL STUDIES

Dr. J. Gerane T. Dougherty, Dean

APPLIED MATHEMATICS

The role of mathematics in our highly scientific-technological society is basic and essential. Mathematical thought and modeling are valued tools in our sophisticated industrial community. The application of mathematics to industry and business to meet society's needs is increasing. This growth and demand continues to create a need for graduates with training in Applied Mathematics.

The program in Applied Mathematics provides: (1) a strong foundation in academic mathematics; (2) computational concepts and techniques in computer science, statistics and mathematical models; (3) experiences in areas where mathematics, computers and/or statistics are utilized; and (4) a broad offering of liberal arts courses.

At the completion of the freshman year or after entering the Applied Mathematics program, all students prepare and submit a tentative plan or guide for their undergraduate program. This plan is developed through consultation with an academic adviser and the Program Director. The ultimate plan is developed to meet the student's professional objectives and goals through the appropriate selection of courses within the major studies and the desired related area in which mathematics, computers and/or statistics are used.

Off-campus work in an approved position using computer and/or statistical techniques in the analysis and solution of

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in liberal studies	50 credits
Required in major studies	53 credits
Required in sub-major	18 credits
Electives	9 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—50 credits required

Course	Credit
326-101 and 102 or 326-111 and 112, and 326-516, English	9
367-1xx, Physical Education	2
391-100 and 508, Speech	4
<i>Select at least 6 credits from the following:</i>	
365-201 or 550, Philosophy	3-6
387-110 or 250, Sociology	3-6
479-110, General Psychology	3
<i>Select at least 6 credits from the following:</i>	
338-xxx, History	3-6
320-210, 215 or 420, Economics	3-6
375-210, 310, Government	3-6
<i>Select at least 3 credits from the following:</i>	
304-xxx, Art	2-3
326-xxx, Literature	3
360-xxx, Music	2-3
391-xxx, Theatre	2-3
<i>Select at least 10 credits from the following:</i>	
308-xxx, Biology*	3-10
311-xxx, Chemistry*	5-10
372-xxx, Physics*	5-10

*Non-laboratory courses will be allowed only by special permission.

◀real world problems is a valuable option within this major. Students receive salaried appointments and course credits. This experience can be included within the program and completed during the junior or senior year. The duration of the experience is for periods of a summer or a summer plus one semester.

FOUNDATIONAL MATHEMATICS (31 credits min.)

Select 8-16 credits from the following in analytical techniques:

355-153, 154, 158, Calculus I, II and III	11
355-156 and 157, Calculus and Analytic Geometry I and II	10
355-255, Differential Equations	3

Required courses in algebraic techniques:

355-275, Linear Algebra	3
355-370, Modern Algebra I	3

Select 6 credits from the following theoretical analysis:

355-450 and 451, Real Analysis I and II	6
355-460, Complex Variables	3

Select from the following electives:

355-262, Modern Geometry	3
355-371, Modern Algebra II	3

COMPUTATIONAL MATHEMATICS (22 credits min.)

Select at least 3 credits from the following in statistical methods:

354-530, Statistical Methods	3
354-531 and 532, Design of Experiments I and II	4

Select at least 3 credits from the following in statistical theory:

354-331 and 332, Probability and Mathematical Statistics I and II	6
---	---

Select at least 2 credits from the following in computer languages:

354-141, Digital Computer Programming	2
354-241, Assembly Language Programming	2
354-246, Computer Programming—COBOL	3
354-590, Topics (Computer Science)	2

Select at least 3 credits from the following in computer methods:

354-240, Intermediate Computer Programming	3
354-245, Numerical Methods	2
354-341, Data Structures	3
354-441, 442, Computer Architecture and Operating Systems I and II	6
354-445, Numerical Analysis	3

Required courses in Mathematical Modeling:

354-490 and 491, Mathematical Models I and II	4
---	---

SUB-MAJORS IN RELATED AREAS (18 credit min.)

Each student selects a sub-major where he or she can use mathematics, computers and/or statistics to develop and enhance the ability to solve problems in his or her area of interest. The area of interest can be chosen from the following sub-majors: Applied Physics, Applied Research, Architectural Design, Business Management, Electronics, Food Production Quality Control, Industrial Management, Mechanical Design, and Numerical Control. The selecting of a sub-major is made at the time a student completes his or her program guide plan.

INTERNSHIP OPTION

354-475, Applied Mathematics Internship	2-8
---	-----

ELECTIVES

In fulfilling the necessary competencies for a degree, a student may complete the requirements for a minor in Business Administration, Economics, Physics, Chemistry, Biology, Computer Science or Speech. It is the student's responsibility to obtain approval for the minor from the department offering it.

ART

The Art program includes four concentrations: Studio Art, Industrial Design, Interior Design and Graphic Design. The curriculum provides students with experiences in studio work, art history, professional studies and liberal studies. An understanding of liberal studies, art history, the present status of art and design, and an inquisitive attitude toward experimentation in problem-solving will move students to a more professional level in their selected concentration. The 25 experienced art faculty ensure current course content and serve as advisers to the students in respective areas. A required midprogram review offers students a general view of their performance. Extensive library resources and the art department slide library are significant assets. Foreign study opportunities allow students variety in cultural experiences. Opportunities in internships and cooperative education supplement educational theory and practice in a setting with working professionals. A 2.25 overall grade point average is required for graduation. A 2.5 grade point average and a "C" or better in art department courses is required to complete this bachelor of science degree. All Studio Art majors must present an exhibition of their work during their senior year. All Design majors must present a portfolio of their work in the final semester.

GENERAL REQUIREMENTS—B.S. DEGREE:

Art—Concentration, Graphic Design

Total for graduation	132 credits
Required in liberal studies	54 credits
Required in major studies	72-75 credits
Electives	3-6 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—54 credits required

Course	Credit
304-319, Evolution of Design	3
304-522, Modern Art	3
320-201, General Economics or	3
320-210, Principles of Economics	3
326-101, Freshman English: Composition or	3
326-111, Freshman English: Honors I	3
326-102, Freshman English: Reading and Related Writing or	3
326-112, Freshman English: Honors II	3
354-140, Computer Concepts or	2
354-141, Digital Computer Programming	2
355-xxx, Math (Elective may be substituted if proficiency is exhibited to Math Department through testing or background)	4
366-xxx, Health	1
367-xxx, Physical Education	2
391-100, Fundamentals of Speech	2
479-110, General Psychology or	3
479-632, Perception	3
<i>Select 12 credits from Humanities choosing from at least two areas:</i>	
326-xxx Literature, 328-xxx Foreign Language (minimum two semesters in same language), 338-xxx History, 365-xxx Philosophy.	
<i>Select 6 credits from Social Sciences choosing from at least two areas:</i>	
303-xxx Anthropology, 375-xxx Political Science, 387-xxx Sociology.	
<i>Select 7 credits from Natural Sciences (one must be a laboratory course):</i>	
308-xxx Biology, 311-xxx Chemistry, 372-xxx Physics.	

MAJOR STUDIES—72-75 credits required

Technical Courses	Credit
130-140, Graphic Arts	2
170-280, Packaging Fundamentals	2
600-504, Elementary Photography	2
<i>Select four courses from the following:</i>	
100-500, Future Studies	2
130-355, Line and Halftone Photo	2
130-366, Image Transfer	3
160-370, Principles of Advertising	3
479-579, Public Relations	2
600-605, Advanced Photography	2
600-630, Audio/Film/TV Production Fundamentals	3
600-645, Color Photography	2
Design—46	
304-100, Drawing I	3
304-101, Fundamentals of Design	3
304-210, Letter Form Design	3
304-300, Design Theory and Methods	3
304-310, Graphic Design I	3
304-360, Graphic Design II	3
304-380, Signage and Exhibit Design	3
304-500, Drawing II	3
304-501, Life Drawing I	3
304-503, Design	3
304-410, Product and Packaging Graphics	3
304-480, Senior Project Graphic Design	4
<i>Select any three from the following totaling nine credits (NOTE: begin sequence second semester freshman year.): 304-502 Life Drawing II, 304-509 Painting I, 304-510 Painting II, 304-517 Printmaking I, 304-518 Printmaking II.</i>	

Select 12 credits from the following Art Studio courses: 304-xxx Sculpture, 304-xxx Ceramics, 304-xxx Art Metals, 304-500 Drawing I, 304-502 Life Drawing II, 304-405 Advanced Presentation Techniques for Designers, 304-510 Painting II, 304-518 Printmaking II, xxx-xxx, Other: approved by adviser previous to enrolling.

ELECTIVES—3-6 credits required (sufficient credit to total 132).

GENERAL REQUIREMENTS— B.S. DEGREE:

Art—Concentration, Industrial Design

Total for graduation	132 credits
Required in liberal studies	54 credits
Required in major studies	72-77 credits
Electives	1-6 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—54 credits required

Course	Credit
304-319, Evolution of Design	3
304-522, Modern Art	3
320-201, General Economics or	3
320-210, Principals of Economics I	3
326-101, Freshman English: Composition or	3
326-111, Freshman English: Honors I	3
326-102, Freshman English: Reading and Related Writing, or	3
326-112, Freshman English: Honors II	3
354-140, Computer Concepts or	2
354-141, Digital Computer Programming	2
355-xxx, Math (Elective may be substituted if proficiency is exhibited to the Math Department through testing or background)	4
366-xxx, Health	1
367-xxx, Physical Education	2
391-100, Fundamentals of Speech	2
479-110, General Psychology or	3
479-632, Perception	3

Select 12 credits from Humanities choosing from at least two areas: 326-xxx Literature, Foreign Language, 365-xxx Philosophy or 338-xxx History.

Select 6 credits from Social Sciences choosing from at least two areas: 320-xxx Economics, 375-xxx Political Science, 387-xxx Sociology, 303-xxx Anthropology, or 336-xxx Geography.

Select 7 credits from Natural Sciences including at least one lab course: 308-xxx Biology, 311-xxx Chemistry, 372-xxx Physics.

MAJOR STUDIES—72-77 credits required

Technical Courses	Credit
130-110, Drafting	2
130-311, Technical Drafting	3
170-101, Processes and Concepts	3
Technical Selectives—10-15	
Select any five courses from:	
100-500, Future Studies	2
140-587, Human Factors Engineering	3
130-140, Graphic Arts	2
130-221, Architectural Design I	3
150-304, Principles of Business Management	3
170-202, Metals	2
170-250, Plastics I	2
170-280, Packaging Fundamentals	2
600-504, Photography	2
Others approved by adviser prior to enrolling.	

Design—45

304-101, Fundamentals of Design	3
304-100, Drawing I	3
304-500, Drawing II	3
304-503, Design	3
304-305, Presentation Techniques	3
304-511, Sculpture I	3

304-300, Design, Theory and Methods	3
304-330, Industrial Design I	3
304-340, Industrial Design II	3
304-430, Industrial Design III	4
304-440, Industrial Design IV	4
304-310, Graphic Design I	3
304-360, Graphic Design II	3
304-315, Environmental Interior Design I or	3
304-320, Interior Furniture Design	3
304-432, Industrial Design Portfolio	1

Select at least nine credits from two areas:

304-500, Drawing II; 304-501, Life Drawing I; 304-509, (or 510) Painting; 304-511, (or 512) Sculpture; 304-513, (or 514) Ceramics; 304-515 (or 516), Art Metal; 304-517 (or 518), Printmaking.

Select sufficient electives to meet the 132-credit degree requirements.

GENERAL REQUIREMENTS—B.S. DEGREE:

Art—Concentration, Interior Design

Total for graduation	132 credits
Required in liberal studies	56 credits
Required in major studies	70-74 credits
Electives	2-6 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—56 credits required

Course	Credit
304-319, Evolution of Design	3
304-522, Modern Art	3
304-533, Period Furnishings	3
320-201, General Economics or	3
320-210, Principles of Economics I	3
326-101, Freshman English: Composition or	3
326-111, Freshman English: Honors I	3
326-102, Freshman English: Reading and Related Writing, or	3
326-112, Freshman English: Honors II	3
326-250, Classical and Biblical Literature in Translation	3
326-351, European Literature in Translation	3
355-xxx, Math (Elective may be substituted if proficiency is exhibited to the Math Dept. through testing or background)	4
366-xxx, Health	1
367-xxx, Physical Education	2
391-100, Fundamentals of Speech	2
479-110, General Psychology or	3
479-632, Perception	3

Select nine credits from Humanities choosing from at least two areas:

326-xxx Literature, Foreign Language, 365-xxx Philosophy or 338-xxx History.

Select six credits from Social Sciences choosing from at least two areas: 320-xxx Economics, 375-xxx Political Science, 387-xxx Sociology, 303-xxx Anthropology, or 336-xxx Geography.

Select eight credits from Natural Sciences including at least one lab course: 308-xxx Biology, 311-xxx Chemistry, or 372-xxx Physics.

MAJOR STUDIES—70-74 credits required

Technical Courses—10 credits	Credit
130-110, Drafting	2
130-221, Architectural Drafting I	3
170-270, Light Building Construction	2
214-140, Textiles	3
Technical Selectives—8-12	
<i>Select four courses from the following:</i>	
245-250, Family Housing	3
245-455, Kitchen Planning	2
130-325, Architectural Design II	3
130-180, Hospitality Living and Institutional Facility Planning	2

214-695, Historic and Contemporary Fabrics	3
150-304, Principles of Business Management	3
170-301, Technology-Resources and Environment	2
214-590, Practicum in Textile Design	3
600-504, Photography	2
354-141, Digital Computer Programming or	2
354-140, Computer Concepts	2
245-436, Commercial and Residential Lighting	2

Design—42 credits

304-100, Drawing I	3
304-101, Fundamentals of Design	3
304-204, Interior Design	3
304-205, Problems in Interior Design	2
304-305, Presentation Techniques	3
304-314, Interior Design Procedures and Specifications	2
304-315, Environmental Design I	3
304-316, Environmental Design II	3
304-320, Interior Furniture Design	3
304-431, Symposium in Interior Design	2
304-451, Interior Design Practicum	3
304-500, Drawing II	3
304-503, Design	3
304-511, Sculpture I or	3
304-513, Ceramics I	3
304-532, Economics of Home Furnishings	3

Select at least 12 credits from two areas:

304-500, Drawing II; 304-501, Life Drawing I; 304-511, (or 512) Sculpture; 304-513, (or 514) Ceramics; 304-509, (or 510) Painting; 304-515, (or 516) Art Metal; 304-517, (or 518) Printmaking.

Select sufficient electives to meet the 132-credit degree requirement.

GENERAL REQUIREMENTS—B.S. DEGREE:

Art—Concentration, Studio Art

Total for graduation	132 credits
Required in liberal studies	56 credits
Required in major studies	76 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—56 credits required

Course	Credit
304-522, Modern Art	3
304-607, Esthetics (Senior Year)	3
326-101, Freshman English: Composition or	3
326-111, Freshman English: Honors I	3
326-102, Freshman English: Reading and Related Writing or	3
326-112, Freshman English: Honors II	3
326-250, Classical and Biblical Literature in Translation	3
355-xxx, Math (Elective may be substituted if proficiency is exhibited to Math Dept. through testing or background)	4
366-xxx, Health	1
367-xxx, Physical Education	2
391-100, Fundamentals of Speech	2

Select 9 credits from Humanities choosing from at least two areas: 326-xxx Literature, 328- or 329-xxx Foreign Language, 365-xxx Philosophy or 338-xxx History.

Select 9 credits from Social Sciences choosing from at least two areas: 320-xxx Economics, 375-xxx Political Science, 387-xxx Sociology, 303-xxx Anthropology, or 336-xxx Geography.

Select 8 credits from Natural Sciences including at least one lab course: 308-xxx Biology, 311-xxx Chemistry or 372-xxx Physics.

Select 6 credits from Liberal Studies Electives from the above categories. Note: 479-110 General Psychology may be accepted as a Liberal Studies Elective.

MAJOR STUDIES—76 credits required

304-100, Drawing I	3
304-101, Fundamentals of Design	3

304-145, Practice of Art	2
304-500, Drawing II	3
304-501, Life Drawing I	3
304-502, Life Drawing II	3
304-509, Painting I	3
304-510, Painting II	3
304-511, Sculpture I	3
304-512, Sculpture II	3
304-513, Ceramics I	3
304-514, Ceramics II	3
304-515, Art Metal I	3
304-516, Art Metal II	3
304-517, Printmaking I	3
304-518, Printmaking II	3
304-545, Senior Seminar	1

(Any two advanced studies (II) may be deleted except 304-500.)

Art Studio Selective: Students must take a minimum of 9 credits in a chosen area beyond the "advanced" level. This establishes a "concentration" which the student must declare to an adviser at the end of the fourth semester of study.

Art History: *Select 15 credits* from any Art History offering.

ART EDUCATION

The Art Education program provides students with experience in liberal studies, art history, studio art and professional education. This bachelor of science program prepares students for certification by the Department of Public Instruction for teaching art in elementary and secondary schools. An understanding of liberal studies, art history, the present status of art and the educational environment, with an inquisitive approach toward problem solving will move students to a more professional level. The 25 experienced art faculty ensure current course content and serve as advisers for students. Preteaching observation, presented at the sophomore level, offers students an early involvement in elementary and secondary schools. A required midprogram review offers students a general understanding of their performance. Extensive library resources and the art department slide library are a significant asset. Foreign study opportunities allow students variety in cultural experiences. Methods courses and student teaching are taken concurrently to provide students with a full semester of teaching in elementary and secondary settings. An optional 11 credit additional concentration in Special Education is available. A 2.25 overall grade point average is required for admission to student teaching and graduation. A 2.5 grade point average and a "C" or better in art department courses are required for admission to student teaching and graduation. Art Education majors must present an exhibition of their work during the senior year.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	132 credits
Required in liberal studies	47 credits
Required in major studies	57 credits
Required in professional studies	28 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—47 credits required

Course	Credit
326-101, Freshman English: Composition or	3
326-111, Freshman English: Honors I	3
326-102, Freshman English: Reading and Related Writing or	3
326-112, Freshman English: Honors II	3
326-250, Classical and Biblical Literature in Translation	3
391-100, Fundamentals of Speech	2
355-xxx, Math (Elective may be substituted if proficiency is exhibited to Math Dept. through testing or background)	4
479-110, General Psychology	3
366-xxx, Health	1
367-xxx, Physical Education	1
304-522, Modern Art	3
304-607, Esthetics (Senior Year)	3
<i>Select 6 credits</i> from Humanities choosing from at least two areas: 326-xxx Literature, Foreign Language, 365-xxx Philosophy or 338-xxx History.	
<i>Select 9 credits</i> from Social Sciences choosing from at least two areas: 320-xxx Economics, 375-xxx Political Science, 387-xxx Sociology, 303-xxx Anthropology or 336-xxx Geography.	
<i>Select 6 credits</i> from Natural Sciences including at least one lab course: 308-xxx Biology, 311-xxx Chemistry or 372-xxx Physics.	

MAJOR STUDIES—57 credits required

304-100, Drawing I	3
304-101, Fundamentals of Design	3
304-145, Practice of Art	2
304-500, Drawing II	3
304-501, Life Drawing I	3
304-509, Painting I	3
304-510, Painting II	3
304-511, Sculpture I	3
304-512, Sculpture II	3
304-513, Ceramics I	3
304-514, Ceramics II	3
304-515, Art Metal I	3
304-516, Art Metal II	3

304-517, Printmaking I	3
304-518, Printmaking II	3
304-545, Senior Seminar	1
(Two advanced studios (II) may be deleted from above except 304-500)	
Art Oriented Studio Electives	9
Art History—Select 9 credits from any Art History offering.	

PROFESSIONAL STUDIES—28 credits required

305-208, Pre-Teaching Observation Seminar (Sophomore Year)	3
305-311, Curriculum Development for Art	2
421-303, Educational Psychology	2
421-422, Principles of Secondary Education	2
431-630, Mainstreaming Special Students	3
421-682, Reading Methods—Secondary School	2
The following courses are taken in the same semester.	
305-402, Introduction to Teaching Art in Elementary Schools	3
305-403, Introduction to Teaching Art in Secondary Schools	3
305-408, Student Teaching in the Elementary School-Art	4
305-409, Student Teaching in the Secondary School-Art	4

SCHOOL OF EDUCATION AND HUMAN SERVICES

Dr. J. David A. Sabatino, Dean

PSYCHOLOGY

Psychology, as a program, is the systematic study of behavior, particularly the behavior of individuals—their actions, reactions and cognitions. It has as its overriding goal the preparation of students to contribute to the improved condition of man. Students acquire competencies that lead to employment wherever psychology is applied in educational institutions, public and private agencies, business and industry. Students entering the program should realize that they must obtain graduate level education or other advanced training before they will be accepted as professional psychologists.

The Psychology Program is flexible. Students are given the opportunity to develop a personal program plan centered around their individual needs and goals. With careful planning, students may include self-planned concentrations in their programs in such diverse areas as counseling foundations, biofeedback technology, human services, family issues, industrial psychology, and many others. All students are expected to include a core of study in the fundamental principles of human behavior in their programs and each is expected to develop literacy in the arts, humanities, natural sciences, and social sciences. Each student is also expected to develop and demonstrate effective communication skills as a part of the program's requirements.

After entering the Psychology Program, all students prepare and submit a tentative plan for the remainder of their undergraduate program as a part of their activities in Psychology Seminar I. This tentative plan is based on their particular

GENERAL REQUIREMENTS—B.A. DEGREE:

Total for graduation	130 credits
Required in liberal studies	70 credits
Required in major studies	40 credits
Electives	20 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—70 credits required

Communications (at least 25 credits) Suggested courses include fundamental English courses and advanced writing courses; fundamental and advanced speech courses; foreign languages; basic statistics; computer programming; journalism; graphic arts; audio-visual communications; reading courses; and others. Students are strongly advised to develop a variety of communication skills involving many different modes of communication.

Fine Arts, Physical Education, and Humanities (at least 15 credits) Suggested courses include art and music appreciation courses; literature courses; philosophy courses; and physical education courses which contribute to good personal health and the development of recreation skills. Students are strongly advised to plan at least one literature course and one philosophy course in this area of their program plan.

Mathematics, Natural and Physical Sciences (at least 15 credits) Students are strongly advised to include at least one college level math course and one laboratory science course. Courses in genetics, physiology, anatomy, sexual biology, animal behavior, and organic chemistry are particularly appropriate for Psychology students. Applied Mathematics courses (e.g. Computer Programming, Statistics, etc.) cannot be used for electives in this category, but with planning, may be used as communications credit.

Social Sciences (at least 15 credits) Students are strongly advised to include at least one sociology course and a balance of courses in history, economics, political science, and anthropology in their program plan.

MAJOR STUDIES—40 credits required

All students enroll in a continuing seminar as a part of their program. As they progress through these seminars, they develop new competencies and demonstrate their achievements. While in Psychology Seminar I, students plan their four-year programs and take a core of required courses: 479-110, 479-120, 479-150, and 479-190. After submitting their program plan and completing the required courses, they progress to Psychology Seminar II.

►personal, vocational and professional in-
terests and goals and is developed with
the guidance of the Psychology program
director and Psychology faculty.

**Course
Required Courses:**

1	479-100, Psychology Seminar I—Foundations
3	479-110, General Psychology
3	479-120, Psychology: Its History and Systems
3	479-150, Humanistic Psychology
3	479-190, Psychology Methods I
1	479-300, Psychology Seminar II
1	479-400, Psychology Seminar III
2	479-x98, Field Experience
1 (at least)	479-x99, Independent Study
<i>Advanced, Elective Courses:</i>	
3	479-251, Child Psychology
3	479-281, Environmental Psychology
3	479-390, Experimental Psychology*
3	479-460, Personality and Mental Health
3	479-484, Introduction to Behavior Modification
2	479-530, Psychology of Learning*
3	479-535, Motivation and Emotion*
3	479-540, Psychology of Individual and Group Differences
3	479-552, Adolescent Psychology
3	479-561, Abnormal Psychology
3	479-570, Assertive Training Procedures
2	413-571, The Psychology of Marriage and the Family
2	479-574, Psychology of Women
2	479-581, Industrial Psychology
3	479-632, Perception*
3	479-690, Psychological Measurement*
3	326-541, Psycholinguistics
3	387-250, Social Psychology
3	413-501, Introduction to Guidance
2	One other 413 course
2-3	421-303, Educational Psychology
2	One other 421 course
2-3	459-101, Introduction to Rehabilitation
3	One other 459 course
2-3	Behaviorally related courses in Life Sciences (e.g., Animal Behavior, Neuroanatomy, Psychobiology)

*Courses conducted primarily for Psychology majors and minors. All Psychology stu-
dents are strongly advised to include a selection of these courses in their program.
ELECTIVES—20 credits required
As much as possible, the courses in this area of the program are free electives. The
particular courses students take for this area depend on their choice of a minor, self-
planned concentrations and personal goals. Many courses in the School of Home Eco-
nomics and the School of Industry and Technology may help students in Psychology to
develop important competencies. These are suggested to students in separate
communications.

MINOR STUDIES—22 credits required

Students in the Psychology Program are required to complete a minor program. They
may elect to complete one of the minor programs offered in various departments at
Stout, or with the program director's advice and approval, they may substitute a preplan-
ned program of work developed around a particular concept or process. The minor
program overlaps other areas of the program and is not a separate selection of courses
beyond the three areas described above.

NON-TRADITIONAL LEARNING EXPERIENCES

In recognition of the value that may be derived from learning experiences that take place
outside of the traditional classroom, the psychology program requires all students to
complete at least one field experience. This involves a working/learning activity and is
often completed during a summer break. In addition, the program requires or encourages
students to participate in additional varieties of learning activities including independent
study, internships, foreign study, exchange programs and others.

SENIOR RESEARCH INVESTIGATION

As a culminating experience in the program, in conjunction with Psychology Seminar III,
students conduct and report an original research investigation pertinent to Psychology
and to their particular interests. This project provides the opportunity for students to
practice skills they have acquired and to apply the knowledge they have attained in their
studies.

VOCATIONAL REHABILITATION

The main objective of this program is to provide the field of rehabilitation with baccalaureate level personnel who have the competencies necessary to help persons with disabilities optimize their vocational potential. A general listing of these competencies includes:

- A. Knowledge of the history, philosophy, and development of the rehabilitation movement; knowledge of the rehabilitation process as it exists in various settings, including sheltered workshops, rehabilitation facilities, private rehabilitation, vocational rehabilitation agencies; knowledge of mental, physical, and social disabilities plus the vocational limitations of these disabilities; knowledge of, and ability to utilize community resources to assist the handicapped; knowledge of, and ability to relate to allied professions: medicine, psychology, social work, physical therapy; and knowledge of, and ability to utilize occupational information and career planning methods.
- B. Elementary skill in the use of vocational evaluation techniques; elementary skill in work adjustment and counseling techniques; and elementary skill in utilizing job placement and follow-up procedures for the handicapped.
- C. Ability to interact effectively with persons with disabilities. This could include persons with physical, emotional and social disabilities such as: mental illness, mental retardation, blindness, deafness, alcoholism, epilepsy, and those who have committed criminal offenses. The graduates of this program are employed in sheltered workshops, rehabilitation facilities, state vocational rehabilitation agencies, private rehabilitation, correctional centers, business and industry, adult day care centers, mental health clinics, halfway houses, and a variety of other settings serving the handicapped. Opportunities for advancement to supervisory and administrative positions are excellent. Graduate study in rehabilitation is available in more than 80 colleges and universities.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in liberal studies	44-48 credits
Required in major studies	53 credits
Required in special studies*	22 credits
Electives	7-11 credits

1. Students majoring in rehabilitation must obtain a "C" or better in all courses taught in the rehabilitation department. The student will have the option of taking the course over again and obtaining a "C" or better or dropping from the program. In addition, an overall grade point of 2.5 is required for all courses taught by the rehabilitation department.
2. Students must fulfill the English adequacy and speech proficiency requirements of the respective departments.
3. Students must select a special studies concentration from any of the following career areas. Courses in these areas are designed to provide specific technical skills for working with persons with disabilities and disadvantaged individuals in rehabilitation settings.

Business - Introduces students to basic principles and practices of business administration.

160-206	Accounting I	3
160-207	Accounting II	3
	Business restricted electives	16

Home Economics - Broad exposure to family, clothing, food and habitational issues.

	Human Development-Family Living restrictive electives	8
	Habitational Resources restrictive electives	4
	Food and Nutrition restrictive electives	5
	Apparel, Textile, and Design restrictive electives	5

Independent Living - Indepth experiences dealing with the critical issues confronting individuals with disabilities to help them live more independently.

459-550	Independent Living	2
459-682	Sexuality and the Disabled	2
459-x97	Field Experience	2
413-405	Peer Counseling	3
479-570	Assertiveness Training Procedures	2
	Independent Living Restrictive Electives	11

Industrial - Provides introduction to industrial activities related to production work in rehabilitation facilities.

170-101	Processes: Concepts	3
150-200	Production/Operations Management	3
	Industrial Arts and Production Management restrictive electives	16

Physical Education - Combination of recreation and sports-related courses for students interested in recreation for individuals with disabilities.

367-315	Adapted Physical Education	3
366-340	ARC Standard First Aid and Personal Safety	2
367-340	Camp Leadership or	
367-325	Recreation Leadership	2
366-355	Kinesiology	3
366-346	ARC Cardiopulmonary Resuscitation	5
	Physical Education restrictive electives	11.5

Rehabilitation Counseling - Counseling provides student with entry level job skills for counseling positions in the rehabilitation field.

413-405	Peer Counseling	3
459-509	Introduction to Biofeedback	3
459-685	Group Processes in Rehabilitation Settings	2
459-5xx	Counseling Practicum	4
	Rehabilitation Counseling restrictive electives	10

Rehabilitation Technology Specialist - Prepares specialists to work with rehabilitation engineers and other rehabilitation staff in applying new and existing technology to assist persons with disabilities in vocational and independent living situations.

459-560	Technological Applications in Rehabilitation Services	2
459-565	Laboratory in Rehabilitation Technology	2
170-102	Manufacturing Processes I	3
170-103	Manufacturing Processes II	3
110-204	Electricity/Electronics Fundamentals	3
130-110	Drafting	2
140-587	Human Factors Engineering	3
170-205	Design for Industry	2
	Rehabilitation Technology restrictive electives	12

NOTE: Concentration requires 32 credits; however, overall requirements for graduation remains at 130 credits.

Vocational Evaluator, Local Education Agency - Certifies students to work as Vocational Evaluators in public schools.

421-682	Reading Methods - Secondary Schools	2
431-630	Mainstreaming Special Students	3
459-413	Vocational Evaluation Seminar	2
	Curriculum and Methods restrictive electives	4-6
	Foundations of Education restrictive electives	4-6
	Career Education and Educational/Vocational Programming restrictive electives	4-8

Individualized Career - Designed for students whose educational goals cannot be met by previous concentrations. Students who select this option must develop, with advice and consent of their faculty adviser, a list of 22 credits that they plan to take. Written rationale explaining their career goals along with the courses selected must be signed by the student and their faculty adviser and be in the student's file by their junior year. This option is frequently used by transfer students.

PROGRAM REQUIREMENTS

LIBERAL STUDIES — 44-48 credits required

Course		Credit
326-101	Freshman English: Composition*	3
326-102	Freshman English: Reading and Related Writing*	3
391-100	Speech*	2
391-2xx	Advanced Speech* or	
326-xxx	Advanced Writing *	2-3
308-132	Physiology and Anatomy*	4
308-220	Physiology of Disabilities*	3
355-1xx	or higher Mathematics	4
387-110	Introductory Sociology	3
479-110	Introduction to Psychology	3
320-xxx	Economics or	
375-xxx	Political Science	3
421-205	Human Relations for the Helping Professions	2
338-xxx	History	2-3
	Literature or Foreign Language	3-4
365-xxx	Philosophy	3
	Art, Music, Theater, or Photography	2-3
	Any 366-xxx or 367-xxx course	2

* A grade of "C" or better is required in these courses before graduation.

MAJOR STUDIES — 55 credits required

459-101	Introduction to Rehabilitation	3
459-102	Community Resources	3
459-201	Basic Skills in Rehabilitation	2
459-205	Rehabilitation Practicum	4
459-310	Vocational Evaluation	4
459-330	Psycho-Social Aspects of Disabilities	3
459-401	Principles and Techniques of Caseload Management	2
459-410	Placement Processes with Handicapped	3
459-585	Rehabilitation of the Mentally Retarded	2
459-610	Psychological Testing with Handicapped People	2
459-670	Work Adjustment Services	3
459-680	Principles of Rehabilitation Counseling	3

459-x98	Field Experience - Vocational Rehabilitation	2
413-675	Counseling Theory	2
479-561	Abnormal Psychology	3
<i>Select 12 credits from the following restricted electives:</i>		
459-325	Rehabilitation of the Sensory Disabled	3
459-402	Rehabilitation Facility Operations	2
459-413	Vocational Evaluation Seminar	2
459-505	Sign Language I	3
459-506	Sign Language II	3
459-520	Rehabilitation of the Chemically Dependent	3
459-525	Rehabilitation of the Public Offender	3
459-550	Independent Living	2
459-560	Technological Applications in Rehabilitation Services	2
459-565	Laboratory in Rehabilitation Technology	2
459-601	Rehabilitation in the Private Sector	2
459-605	Microcomputer Applications for the Handicapped	2
459-682	Sexuality and the Disabled	2
459-685	Group Processes in Rehabilitation Settings	2
459-688	Advanced Job Placement	2
459-x97	Field Experience	2-4
459-x99	Independent Study	1-6
140-580	Driver Education for the Handicapped	2-3
421-305	Teaching Practicum	2
431-561	Prescriptive Diagnostic Teaching	3
431-581	Legal Rights of the Handicapped	2
Or others approved by the Program Director		

SPECIAL STUDIES CONCENTRATION — 22 credits are required from one of the concentrations previously mentioned. Students must select a concentration and have the form signed by the student and the faculty adviser by their junior year. Two of the concentrations, Rehabilitation Technology Specialist and LEA Vocational Evaluator, require either more than 22 credits and/or involve additional changes in the overall curriculum requirements. However, the credits necessary for graduation (130 credits) are the same as the other concentrations.

FREE ELECTIVES — 7-11 credits from courses offered at Stout or those approved for transfer.

SPECIAL EDUCATION TEACHER CERTIFICATION

Special Education Teacher Certification (Secondary MR) may be obtained along with a Bachelor of Science degree in Vocational Rehabilitation by completing the required credits in Liberal Studies and the following courses. Students considering this unique program must see the Special Education Program Director for arrangements. A grade of "C" or better and a grade point average of 2.5 or higher is required in all Special Education and Rehabilitation courses.

SPECIAL STUDIES—at least 20 credits required

Course	Credit
212-250, Individual and Family Relations	3
229-124, Foods or	
229-212 Nutrition	3-4
214-266, Apparel Construction or	
214-590 Practicum in Textile Design	3
170-101, Processes	3
170-304, Industrial Crafts or	
170-270 Light Building Construction	2
130-140, Graphic Arts	2
110-210, General Motor Mechanics or	
140-580 Driver Education for the Handicapped	2
600-560, Audio Visual Communications	2

SPECIAL EDUCATION—42 credits required

431-532, Psychology of the Exceptional Child	3
421-205, Human Relations for the Helping Professions	2
421-536, Working with the Culturally Different	2
421-438, Curriculum Development	2
421-440, Management of the Learning Environment	2
421-682, Reading Methods-Secondary Schools	2
431-559, Curriculum for the Retarded	2
431-560, Special Education Methods and Materials	2
431-561, Prescriptive Diagnostic Teaching	3

431-562, Clinical Experience With the Handicapped	2
431-585, Introduction to Mental Retardation	2
431-660, Practicum in Special Education	2
431-661, Career Education for Handicapped Youth	3
431-662, Classroom Management Techniques	3
431-480, Student Teaching with Handicapped Youth	8
431-555, Issues in Special Education or	
431-581 Legal Rights of Handicapped	2

VOCATIONAL REHABILITATION—24 credits required

459-101, Introduction to Rehabilitation	3
459-102, Community Resources	3
459-201, Basic Skills in Rehabilitation	2
459-310, Vocational Evaluation	4
459-3xx, Rehabilitation of the Mentally Ill	2
459-401, Principles and Techniques of Case Load Management	2
459-410, Placement Processes with the Handicapped	3
459-610, Psychological Testing with Handicapped People	2
459-680, Principles of Rehabilitation Counseling	3

ELECTIVES—6-7 credits required

SPECIAL FIELDS CERTIFICATION

Special Fields Certification is an “add-on” teaching certificate to allow teachers in special fields, i.e., Industrial Education, Home Economics, Physical Education, and Art Education to teach special needs students in their particular field. The following planned sequence of courses will allow students completing teacher certification in special fields and/or teachers already certified in special fields to receive Special Education certification within their special field. This 11-semester credit sequence is recognized as an approved program by the Wisconsin Department of Public Instruction.

431-532, Psychology of the Exceptional Child or	3
431-630, Mainstreaming Special Students	3
431-561, Prescriptive Diagnostic Teaching	3
431-562, Clinical Experience With Handicapped Youth*	2
431-662, Classroom Management Techniques	3

*This course may be waived for students exposed to supervised clinical experience with handicapped youth in student teaching.

SPECIALIZATIONS

An all-university specialization is designed to achieve defined outcomes. Designing an all-university specialization begins by identifying a significant area of study, by setting forth the outcomes intended, and by identifying the learning experiences to be offered to students, and the evaluation procedures to be used. Curricular design for all-university specializations is not constrained to traditional academic patterns. Primary consideration is given to clarity in defining intended outcomes, effectiveness in promoting learning and appropriateness to the targeted student population. Learning experiences for all-university specializations often include non-credit experiences, internships, mentor-fellow interactions, evaluations of specified capabilities achieved outside of the university setting, or successful completion of proficiency evaluations or external certification or licensing examinations. Of course, most all-university specializations include traditional university course work as well. These courses are often from several departments or curricular areas and involve faculty from several disciplines.

All-university specializations do not depend on the backgrounds of students in any single major. They are intended to accomplish their objective within the learning experiences listed for the specialization. However, if a student takes courses as part of the all-university specialization, those courses may also be applied to a variety of existing graduate or undergraduate degree programs, as far as the curricula of these programs permits. Completion of an all-university specialization is recorded on the student's transcript and a certificate of completion is issued as well.

All-university specializations are not defined primarily in terms of numbers of credits accrued. Instead, the program specifies the completion of prescribed learning experiences and/or achievement of specified capabilities. The student's time commitment is consistent with achieving the desired outcomes. All-university specializations are highly focused; that is, they do not address secondary or concomitant outcomes. They do not include electives and there is limited opportunity (if any) for students to select among comparable

courses. They are designed to focus on specific, designated purposes, rather than being intended for individualization for each student. All-university specializations are specified programs to achieve desired outcomes, with designated evaluation procedures.

All students enrolled at Stout have the option of completing an all-university specialization in addition to the degree program. Courses taken for the specialization may also be applied to the degree program, where they fit within the requirements of the program. In some cases, electing both a degree program and an all-university specialization may not increase the length of time spent at the University beyond the usual commitment for the degree alone; in other cases, additional time may be required.

CRAFTSMANSHIP

This all-university specialization is intended for persons with interest in any of several craft areas, who wish to achieve professional levels of skill and knowledge in that craft. For each student in the all-university specialization, a team of faculty members with expertise in the area (which may also include practicing professional craftspeople) will be appointed. This team will plan a series of learning experiences for the student and will meet periodically during the program to assess the student's progress toward the program objectives.

The principle instructional method for this all-university specialization is individually guided learning experiences, conducted in the University laboratories under supervision of a faculty committee and/or under the immediate supervision of a practicing craftsman. Existing course work will also be utilized as a source of learning experiences, where appropriate. Stout offers extensive course work related to several craft areas. Internships in operational crafts businesses may also be arranged for some students. The principle evaluation process for this specialization is periodic review, including formative and summative evaluation by the team of faculty members, which will be appointed for each student in the specialization. The faculty advisory team will also conduct the summative evaluation.

Requirements for the Specialization

INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1 Refine skills in chosen craft area.	Participation in craftwork under the direction of a faculty member and/or professional crafts people.	Evaluation and critique by faculty adviser and/or professional crafts people.
2 Develop a sense of aesthetics.	Interaction with faculty, visiting artists and professional crafts people.	Evidence of a sense of aesthetics and attitudes of excellence will be displayed in individual work, evaluated by a team of advisers.
3 Develop a critical understanding of one's abilities.	A study of and extensive work in a specific craft area.	Successful completion and evaluation of quality craft items via critiques with professionals. Progress will be evaluated periodically by a team of advisers.
4 Develop the ability to successfully confront new design and technical challenges.	Problems which require new and unique solutions will be assigned, worked on and completed by the learner.	Degree to which problem criteria have been fulfilled in the proposed solution will be evaluated by the team of advisers.
5 Develop knowledge of appropriate facilities, tools, resources and materials.	Work with appropriate facilities, tools, resources and materials. (See below for a sample listing of existing related course work at Stout.)	Evidence of using appropriate facility, tools, resources and materials, to be evaluated by supervisor(s) of laboratory experience.
6 Develop a knowledge of procurement of tools, materials and equipment.	Select and procure proper tools, materials and equipment. With help of faculty adviser, work toward meeting standards of quality.	Success in obtaining proper tools, materials and equipment. Evidence of working to set standards of quality. Progress evaluated periodically by faculty adviser. Summative evaluation by team of advisers.
7 Develop individual standards of quality craftsmanship.	Work toward meeting standards of quality.	Evidence of working to set standards of quality. Progress toward, and achievement of professional standards of craftsmanship, will be confirmed by team of advisers.
8 Develop ability to assess viability of craft career.	Discussions and critiques with faculty and professional crafts people.	Self-assessment of craftwork and career potential. Validity of self-assessment confirmed by team of advisers.
9 Develop ability to use references related to individuals chosen craft.	Utilize references on a continuous basis and conduct library research on a major project.	Produce a research paper and/or project. Quality of paper and/or project will be evaluated by the team of advisers.
10 Develop an understanding of appropriate small business practices.	Study appropriate tax, resource, production and accounting systems. Complete the course 160-230 Small Business Management (3 credit) or an internship in an operating crafts business (minimum of 3 credits).	Successful completion of designated course work and/or internship experiences.

which determines whether the student has successfully completed the program. Contact the Office of the Dean, School of Industry and Technology for further information.

Courses in Crafts-Related Areas

Courses may be selected from the following list or from other current offerings, as appropriate, according to the objectives and existing level of expertise and ability of individual students in the craftsmanship specialization.

304-513 Ceramics (3 credits)	170-313 Wood Technology (3 credits)	214-545 Commercial and Household Textiles (2 credits)
304-514 Ceramics (1-3 credits)	170-331 Machine Shop (2 credits)	214-550 Textile Evaluation (3 credits)
304-515 Art Metal (3 credits)	170-333 Machine Shop III (2 credits)	214-590 Practicum in Textile Design (3 credits)
304-516 Art Metal (1-3 credits)	170-344 Cabinet Work I (2 credits)	214-591 Natural Dyeing and Hand Spinning (2 credits)
304-520 Clay and Glaze Laboratory (1 credit)	170-346 General Woodworking (2 credits)	214-592 Practicum in Textile Printing (1 credit)
170-202 Metals (2 credits)	170-357 Patternmaking-Foundry Practice (3 credits)	214-690 Advanced Textile Design - Stitchery (2 credits)
170-209 General Finishing (2 credits)	170-365 Welding I (2 credits)	214-691 Advanced Textile Design - Non-Loom (1 credit)
170-222 Industrial Ceramics (3 credits)	170-460 Metal Forming and Fabrication (2 credits)	214-692 Advanced Textile Design - Hooking (1 credit)
170-230 Machine Shop (2 credits)	170-515 Metallurgy (3 credits)	214-693 Structural Design and Weaving (2 credits)
170-240 Basic Woodworking (1 credit)	170-559 Foundry Seminar (1-2 credits)	214-694 Advanced Weaving Studio (2 credits)
170-241 Machine Woodworking (2 credits)	170-565 Welding II (2 credits)	
170-260 Sheet Metal (2 credits)	214-140 Textiles (3 credits)	
170-304 Industrial Crafts (2 credits)	214-272 Industrial Sewing (2 credits)	
170-308 Surface Coatings and Treatments (2 credits)		

INVENTING

The desire to learn is in every creative person, especially to the degree that the results of the study will aid in improved creativity. The student who chooses this all-university specialization will typically have a creative mind and desire to improve his/her inventing skills. The all-university specialization of inventing is intended not only to satisfy these student needs, but also to help solve the societal problems by increasing productivity. Technology has advanced at an extremely rapid pace, but it has not yet been utilized to its fullest potential for the development of new products or processes. By acquainting persons who have creative minds with the most recent advances in technology, chances for new and innovative ideas may increase. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1 Read mechanical drawings.	Complete the course 130-110 Drafting (2 credits) or equivalent.	Performance examination using simple and complex machine drawings.
2 Produce mechanical drawings.	Complete the course 130-311 Technical Drafting (3 credits) or equivalent. Complete working drawings for an object should be included.	Present completed working drawings to a craftsman for evaluation.
3 Prepare a precise freehand sketch of an object.	Complete the 304-101 Fundamentals of Design (3 credits) and/or 304-503 Design (3 credits) or the following equivalent series: 304-100 Drawing (3 credits), 304-500 Drawing (3 credits), and 304-305 Presentation Techniques (3 credits).	Performance evaluation: Given an object to sketch, do so with precision and without measuring instruments.
4 Explain mechanical, electrical, fluid and other scientific principles.	Complete physical and technical courses appropriate to the student's special interest area. Courses will be assigned by advisement of technical adviser in consultation with appropriate science department chairperson.	Using an appropriate product which encompasses the desired scientific principles, the student will explain in writing the principles and laws involved.
5 Explain patent procedures.	Conduct an independent study or attend a seminar on patent procedures and law.	Outline the procedure for seeking a patent.
6 Develop a marketing plan for a new product. Set up an organizational structure to produce it.	Complete course 160-230 Small Business Management (3 credits) or complete 160-x98 Field Experience (2 credits).	Given a new patent on a product, list the steps to take and resources available to market and produce the product.
7 Operate machine tools and use hand tools in model making.	Depending upon area of interest, take basic technical courses to gain proficiency in that area(s), i.e. 170-101 Processes (2 credits); 170-202 Metals (2 credits); 170-250 Plastics (2 credits); etc.	Produce a model of a new product from a set of working drawings.
8 Select and develop a reading list of trade publications.	Conduct independent study to include in-depth research in at least one trade area which would yield a comprehensive list of trade publications.	List the library resources and procedures necessary to produce a complete list of trade publications in a given area.
9 Relate the biography of selected famous inventors and their major inventions.	Conduct independent study of an approved list of biographical writings about important inventions and inventors.	In an oral exam setting, answer selected questions on why and how a particular invention was developed.
10 Solve problems through logical reasoning, analysis and synthesis.	Complete mathematics course 354-141 Computer Programming (2 credits) and Philosophy, 365-301 Introduction to Thinking and Scientific Methodology (3 credits).	Given a complex problem, present in writing an original solution to the problem using, where possible, modern data-handling processes.
11 Recognize an area of need or a specific need or problem. Explore and show multiple approaches to solving that problem through idea sketching, model building, verbalization or any other means that will give insight into the problem solution.	Complete courses which focus on problem solving and presentations, such as 304-300 Design Theory and Methods (3 credits), 304-330 Industrial Design I (3 credits), 304-340 Industrial Design II (3 credits), and 304-430 Industrial Design III (4 credits).	Make a presentation to a jury of experts. The presentation would include approaches to the problem and solutions selected to satisfy a need or solve a specific problem.
12 Present a complete proposal for an invention.	Consult with staff as needed, via independent study.	Evaluation and critique by program committee for all-university specialization.

TRAINING AND HUMAN RESOURCE DEVELOPMENT

Education is not the sole province of schools. Programs of instruction are conducted by many businesses, industries, in the military, and by other groups and organizations. Planning and providing this instruction is the province of professionals usually identified as "trainers." In our technological society, training programs have become increasingly complex and demands on trainers have increased. Greater expertise on their part is required. This all-university specialization addresses needs for pre-service and in-service education for trainers.

This program is intended for students who have expertise in areas such as engineering, technology, education, business, government, military and labor, and who desire to become involved in development and implementation of training programs. These students bring to the program a knowledge of their professional area and, in some cases, experience in training programs.

The all-university specialization consists of a series of courses and an internship. In all, completion of the all-university specialization will require at least 17 credits in course experiences, plus an additional 4-8 credits for the internship. The internship designed for the training program is central to the program, hence it appears as a part of the experience required to meet each objective of the program. The credits assigned to individual internships will vary from 4-8, depending on the extent of the specific objectives designed in the "education agreement." The length of the internships will vary, depending on the credit assigned, but in every case will be two or more weeks, full time, per credit earned. Contact the Office of the Dean, School of Industry and Technology, for further information.

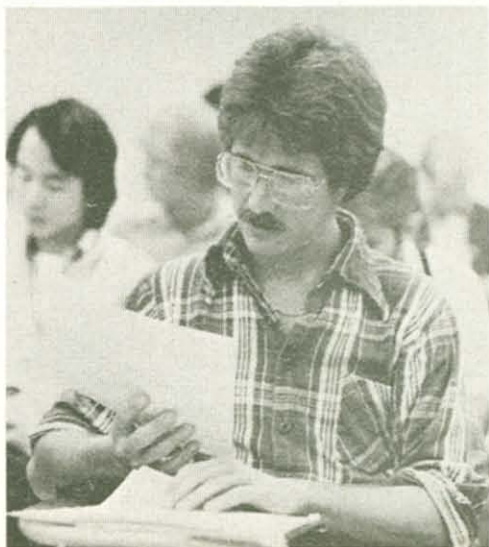
Requirements for the Specialization

INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1 Utilize acceptable analysis procedures in determining training needs in the trainer's professional area.	Complete the courses: 199-534 Task Analysis (2 credits), 198-550 Introduction to Industrial Training (2 credits), xxx-680 Internships (4-8 credits). Select either of the following: 150-600 Organizational Leadership (3 credits), 479-582 Personnel Management (3 credits).	Successful completion of courses at left (7 credits). Successful completion of the contractual agreement of the internship as determined by the Stout supervisor in consultation with the business, industry, government or military supervisor, and successful completion of a field report. (Minimum 4 credits)
2 Design a training program based on established needs.	Complete the course 600-560 (2 credits), AV Communications; a course from the appropriate school in curriculum development or course construction (2-3 credits)†; a course on the Psychology of Learning (2 credits)††; and a course on teaching methods or strategies (2 credits)§. Complete the course xxx-680, Internship.	Successful completion of courses at left. (Minimum 8 credits) Successful completion of the contractual agreement of the internship as evaluated by the business, industry, government or military supervisor, and the Stout supervisor. Completion of a field report is required.
3 Implement and coordinate a training program; design and teach training courses.	Complete the course xxx-680, Internship.	Successful completion of the contractual agreement for the internship. Success is evaluated by the business, industry, government or military supervisor, and by the Stout supervisor. Completion of a field report is required.
4 Evaluate the effectiveness of training courses or programs.	Complete a course on evaluation and/or program evaluation (2 or 3 credits), such as 421-742 Program Evaluation (3 credits), 421-641 Educational Evaluation (2 credits), 190-406 Instructional Evaluation in Industrial Education (2 credits), 199-640 Instructional Evaluation in Vocational Education (2 credits) or 242-710 Applied Evaluation in Home Economics (2 credits). Complete the course xxx-680, Internship.	Successful completion of course at left. (Minimum 2 credits). Successful completion of the contractual agreement of the internship as evaluated by the business, industry, government or military supervisor, and the Stout supervisor. Completion of a field report is required.

† Such as 190-405 Curriculum Development in Industrial Education (2 credits); 190-638 Course Construction (2 credits); 196-401 Distributive Education Curriculum (3 credits); 199-638 Course Construction for Vocational Educators (2 credits); 421-438 Curriculum Development (2 credits); and 242-301 Home Economics Curriculum (3 credits).

†† Such as 479-530 Psychology of Learning (3 credits); 421-303 Educational Psychology (2 credits); 421-685 Psychology of Adult Education (2 credits).

§ Such as 190-205 Methods of Teaching Industrial Education (2 credits); 196-301 Methods in Distributive Education (4 credits); 199-605 Methods of Teaching Vocational Education (2 credits); 421-714 Teaching Strategies (4 credits); and 242-201 Teaching Techniques in Home Economics (2 credits).



FUTURES STUDIES

Increasingly, our society needs people who have the skills and talents to make projections, and to use the concepts and techniques of futures studies. As change increasingly affects our lives, people who have the skill to manage the dynamics of change will be in demand, both personally and professionally, in education, government, the military, business, industry, the church and volunteer organizations.

The curriculum for this all-university specialization includes three group instruction courses (5 credits) and four individually guided learning experiences (6 credits). The individually guided experiences include two independent studies, an on-campus internship and a field study to be conducted in an off-campus setting. Completion of the all-university specialization requires a total of 11 credits. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1 Understanding of the concepts, materials and organizations related to Futures Studies.	100-500 (2 credits) Introduction to Futures Studies. This course will introduce the student to the information and skills necessary to start and continue Futures Studies activities.	Examination, papers and reports, all meeting a minimum grade of "C."
2 Ability to employ common futures forecasting techniques within the context of a futures research project.	100-525 (1 credit) Advanced Futures Studies. This independent study course will focus on projection techniques. The student will experiment with several of the common techniques.	Examination, papers and reports, all meeting a minimum grade of "C."
3 Ability to apply the concepts and techniques of Futures Studies to the institution of the family.	212-580 (1 credit) Future of the Family. Evaluation of experimental and utopian forms of the family and study of the future of the family.	Examination, papers and reports, all meeting a minimum grade of "C."
4 Ability to employ futures studies resources to do futures research.	190-523 (2 credits) Futures of Technology. This course will focus on the three time frames of technology, starting with definitions and exploration of others' ideas about future possibilities. 100-xxx (1 credit) Independent Study Literature Search. This experience will involve the student more heavily in a particular area of interest and provide an opportunity for some original futures research.	Positive recommendation from the adviser and an annotated bibliography derived from the literature search.
5 Ability to apply the concepts and techniques of futures research to academic purposes.	100-xxx (2 credits) Internship in Center for Futures Studies. This on-campus experience will provide an opportunity for students to practice the skills learned, to broaden their experiences and to provide a service to the Stout community.	Positive recommendation from Center for Futures Studies director, based on the quality of reports and an assessment of reactions from clients.
6 Ability to conduct futures research within corporate or organizational setting.	100-xxx (2 credits) Applied Field Study. This off-campus experience will offer a community service and provide a culminating and synthesizing experience for the student prior to an initial position as a practicing futurist. The student will be associated with a community organization able to utilize the talents of a futurist.	Positive reaction from agency with which student has served during the field study (a checklist of criteria will be provided).



MINORS AND CERTIFICATION PROGRAMS

Minors are defined as teaching and non-teaching. Teaching minors are those approved by the State Department of Public Instruction for certification. Requirements for the teaching minors include an education major, the methods course 421-305 in the minor, and some student teaching experience in the minor field, in addition to the required credits within the minor. The Approval Form for Minor Program must be submitted to the department offering the minor before starting the minor to assure an acceptable sequence of courses. Approval forms and minor program plans are available in the office of the department offering the minor.

AGING FAMILY

This minor addresses a major societal concern about the improvement of quality of life for people in families of all ages. Sixteen to 19 credits are required. A practicum or clinical experience with the aging must be included. The minor must be planned with and approved by an adviser. Consult the Office of Associate Dean, School of Home Economics.

ART

Twenty-two to 24 semester hours are required. Required courses are 304-100, 304-101, and 304-522. The additional 13 to 15 credits may be accumulated to overview or concentrate in one area. Students may select courses in Drawing, Painting, Printmaking, Ceramics, Art Metals, Sculpture, Interior Design, Industrial Design and Graphic Design to fulfill the balance of the Art minor.

AVIATION/AEROSPACE STUDIES

A minimum of 23 semester hours is required for a minor in Aviation/Aerospace Studies. There are two options: (1) a teaching minor, which must be part of a teaching major and (2) a non-teaching minor.

Required courses for either option are 110-630, 110-631, 190-505, 170-560, 372-221 and 195-300. Additional required courses for the teaching minor are: 110-635 or 110-x99 and 190-205 or 421-305. Some student teaching is required in Aerospace Education. Additional required courses for the non-teaching minor are: 110-635 and 110-x99.

BIOLOGY

A non-teaching minor consists of 22 semester hours of biology. The required courses in biology are 308-132, 308-142, 308-152, and 308-306. Additional courses to complete 22 semester hours of biology will be selected. Of these no more than two of the courses 308-150, 308-332, and 308-342 will be acceptable. The course 308-122 is acceptable only when taken before the courses 308-142 and 308-152. Inorganic chemistry is not required for the non-teaching minor.

All students entering a minor program in biology will be assigned a faculty adviser to aid the student in proper scheduling of courses.

BUSINESS ADMINISTRATION

A minor in Business Administration consists of 22 semester hours. The minor must be approved by the Department. Required courses are 160-206, 160-207, 150-304, 160-330, 320-210, and 320-215 (18 credits). Elective courses may be selected from any business course or other course(s) approved by the Department of Business. (4 credits).

CHEMISTRY

Twenty-two semester hours are required. Required courses are 311-115 or 311-125 or 311-135, 311-136, 311-201, and 311-203. At least one of 311-204 or 311-531 or 311-535 plus additional selected chemistry courses to obtain 22 semester hours. Chemistry minors who plan to obtain teaching certificates are required to select 311-501, 311-503, and 311-535 plus an additional two-semester hour course 421-305, for a total of 24 semester credits.

COACHING CERTIFICATION/ MINOR

A minor in coaching consists of a minimum of 22 semester hours. Eighteen semester hours are required for certification with at least one course in each of five areas. Asterisk (*) denotes required courses. Area I: 366-340* and 366-350*; Area II: 367-350, 367-360 and 367-450; Area III: 367-401, 367-460, 367-461, 367-465, 367-470, 367-471 and 367-478; Area IV: 308-132*, 366-355*; Area V: 366-102 and 366-365*. Area VI contains elective courses for the 22-credit minor only: 367-490, 367-499, 367-345, 367-346, 367-347, 229-202 or 229-212, and 367-187.

COMPUTER SCIENCE

Twenty-two semester hours are required for a minor program in Computer Science. The minor program is to be planned with and approved by the Department of Mathematics. Required courses are: (354-141 and 354-240) or 354-143; 354-241; two of 354-245, 354-341 and 354-445; and Independent Study, Field Experience or Internship. Additional courses will be selected by the student and the Department.

ECONOMICS

Students may elect a 22-credit minor in Economics either for teaching or non-teaching. Required courses are 320-210, 320-215, 320-325, or 320-470, 320-410 and 320-415. Additional economics courses will be selected, 338-520 may be included. However, both 320-335 and 320-440 and both 320-420 and 320-421 may not be applied to the minor. Students who take a teaching minor must also take 421-305, Teaching Practicum, 2 credits, in addition to the 22-credit minor.

ENGLISH

A teaching minor in English consists of 22 semester hours in English plus two semester hours in Education Methods. A non-teaching minor in English consists of 22 semester hours in English.

Students must have 2.5 grade point in English courses to be awarded the minor. All English minor programs must be approved by the Department of English.

Students who wish to be certified to teach English must take a teaching minor in English. A teaching minor in English must include the following courses: 326-340, 326-402, 421-305. From each of the following sets, students must choose at least one: a) 326-344 or 326-347; b) 326-350, 326-355, 326-360; c) 326-348, 326-400, 326-401. Additional credits will be selected from the offerings in English, exclusive of 326-101 and 326-102; 326-111, Honors, and 326-112, Honors, may be included.

A non-teaching minor in English for those who do not wish to be certified to teach is taken with an option in either literature or writing.

The non-teaching English minor with an option in literature must include one course in English Literature and one course in American Literature. The remaining 16 credits may be selected from the other literature offerings; one advanced writing course may be included; 326-347 is suggested.

The non-teaching minor in English with an option in writing includes courses from the following blocks: (a) language (minimum of three semester hours); (b)

literature (minimum of six semester hours); (c) writing (minimum of 11 semester hours); and (d) electives (minimum of two semester hours from any of the above blocks).

FOOD TECHNOLOGY

Thirty-four semester hours are required for a Food Technology minor. Required courses are 229-124 or 229-240, 229-212, 229-638, 229-642, 229-650, 150-200, 170-280, 308-306, 311-511, 311-515 and 372-211.

This minor would combine best with food-related Home Economics majors, Industrial Technology, Business Administration and Applied Mathematics. Students may obtain forms and additional information from the Food and Nutrition Department office.

HISTORY

Students may elect a 22-credit minor in History either for teaching or non-teaching. Required courses are 338-120, 338-121, 338-140 and 338-141. Additional history courses will be selected. Course 336-104 may be included.

Students who take a teaching minor must include two of the following courses: 338-322, 338-360, and 338-380 and, in addition to the 22-credit minor, must take 421-305 Teaching Practicum, 2 credits.

JOURNALISM

Twenty-two semester hours are required. The student must have a 2.5 grade point in courses submitted for the minor. (A) Required courses are 130-140, 326-306, 326-310, 326-410, 326-425, 600-504. (B) At least one course must be chosen from this group: 326-320, 326-347, 326-515, 326-516, 326-546. (C) Seven more semester hours must be chosen, either from more courses in group B, or else from the following: 130-246, 160-370, 326-310, 326-518, 391-120/5, 391-244, 391-544, 479-579, 600-632, Field Experience and Independent Study.

MATHEMATICS

A minor program in Mathematics may be chosen as a teaching or a non-teaching minor. Either program is to be planned with and approved by the Department of Mathematics. The program leading to teaching certification requires 24 semester hours. The required courses are: 355-153 or 355-156, 355-262, 355-275, 354-331 or 354-530, 355-370 and 421-305. Additional courses will be selected by the student and the Department.

A non-teaching minor in Mathematics requires a minimum of 22 semester hours. The required courses are: 355-153 and 355-154, or 355-156 and 355-157. Additional courses will be selected by the student and the Department.

PHYSICS

Twenty-two semester hours are required. Required courses are 372-221, 372-222, 372-223 and 372-529. At least eight credits with a 500 number or greater must be included in the minor program. All minor programs must be planned with and approved by the Physics Department.

PROPERTY MANAGEMENT

Property Management minors will complete 28 credits. The minor consists of 23 required credits and five elective credits available in 14 departments. The administrator of the department of Habitational Resources coordinates advisement and approvals for the property management minor.

PSYCHOLOGY

Twenty-two semester hours are required. Required courses for 11-semester credit hours include: 479-110, 479-460 or 479-561; one of the following: 479-190, 479-690, 421-641, 354-130 or 354-530; 479-251 or 479-552. Courses from which to select 11 or more semester credit hours include: any of the courses listed above not already taken; 479-120, 479-150, 479-281, 479-390, 479-484, 479-530, 479-535, 479-540, 479-570, 479-571, 479-574, 479-581, 479-582, 413-655, 413-675, 413-691, 421-303, 431-532, 459-585, 303-220, 387-250, 326-541, 308-650, 308-651, Field Experience and Independent Study in Psychology.

SOCIOLOGY

Twenty-two semester hours are required. Required courses are 387-110 and 303-220. Additional sociology courses will be selected, 303-250 and 303-300 may be included.

SPEECH

A teaching minor in Speech consists of 24 semester hours. Required courses include 391-101, 391-102, 391-200, 391-202, 391-206, 391-208, 391-310, 391-512 and 421-305. Additional courses may be selected from speech electives.

A non-teaching minor consists of 22 semester hours with the following four options: General Speech, Communications and Public Address, Radio-Television, and Theater. Each minor includes a minimum of 10 semester hours in the option plus 12 semester hours from the remaining three areas. A maximum of three credits may be selected from communication related courses offered by other departments when approved by the Speech Minor adviser.

TECHNICAL WRITING

Twenty-two semester hours are required. Four courses must be taken: 326-347, 326-425, 326-515 or 326-516, 326-546. At least two courses must be taken from this group: 326-306, 326-320, 326-346, 326-410, 326-525. Up to six credits may be selected from this group: 130-140, 130-246, 130-414 A-C, 160-370, 300-x49D, 326-xxx (any literature), 365-301, 391-508, 600-504.

TOURISM

A minor in Tourism consists of 24 semester hours. Required courses are 245-240, 245-340, and 245-682. The language requirement consists of four semester hours of (French) 328-101, 328-102, (Spanish) 329-103, 329-104 or a comparable number of hours of a well-known language used in international travel and trade, such as German, Italian, Russian, Chinese, Portuguese or Japanese. Minors in Tourism must also complete five-semester hours of approved elective credits. This minor in Tourism is coordinated by the administrator in the department of habitational resources.

TRAFFIC SAFETY

Twenty-two semester hours are required. Required courses are 140-271, 140-375, 140-377, 140-574 and 140-575; at least one of the following three courses is required: 140-380, 140-577, or 140-578. The elective grouping is as follows: 366-340, 421-303, 600-560, 413-501.

WOMEN'S STUDIES

Twenty-two semester hours are required. Required courses are 300-510, 300-511, 479-574, 387-275 and 326-372 or 304-331. Additional courses will be selected from courses relevant to women's studies in various disciplines, including Independent Study. The minor must be planned with and approved by an adviser. Consult the Office of the Dean, School of Liberal Studies.

COURSE DESCRIPTIONS

COURSE NUMBERING SYSTEM

Stout uses a six digit course numbering system. The first three digits designate the school and department offering the course. The School of Industry and Technology courses begin with 100; Home Economics—200; Liberal Studies—300; and Education—400. Courses begin with 500 are administered by the Vice Chancellor's Office. Learning Resource courses are numbered in the 600 series.

The second three digits of the course number refer to the course level. The 100 series is primarily for freshmen; 200—sophomore, 300—juniors; and 400—seniors. The 500 series is junior/senior level but is also appropriate for graduate credit. The 600 series is senior and graduate level; 700 series is graduate level only; and the 800 series is available to graduate students at the Ed.S. level only.

COURSE SCHEDULING

A letter system has been developed to help students plan course schedules. Letters following course descriptions indicate when a course is usually offered. F—Fall Semester; W—Winter Semester; S—Summer Session; SO—Summer Session odd numbered years; SE—Summer Session even numbered years. Courses not lettered follow no usual pattern. The system does not guarantee that a course will be offered during a particular semester.

Courses which are repeatable for credit and those for which a special course fee applies are also noted in the catalog description.

INDUSTRY AND TECHNOLOGY

100-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2," "3," or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

100-110 Crafts Seminar I 1 Cr. Seminar emphasizing historical perspectives of the crafts field, contemporary trends and the nature of aesthetics. F-W-S

100-310 Crafts Seminar II 1 Cr. Seminar emphasizing historical perspectives of the crafts field, contemporary trends and the nature of aesthetics which culminates in a major presentation given to students enrolled in 100-110 Crafts Seminar I. Prerequisite: 100-110. F-W-S

100-500 Introduction to Futures Study 2 Cr. Methods of future projection, orienting thought toward future alternatives; impact of future problems on major areas of human activity. F

100-525 Advanced Futures Study 1 Cr. Student-designed futures study based on application of methods to student's program area. Prerequisite: 100-500.

100-590 Technical Service Schools .5-6.0 Cr. Some special-purpose technical courses offered by manufacturers are suitable for college credit. Guidelines: 1) student makes all arrangements with manufacturer offering course; 2) one credit is awarded for each full week (40 clock hours) of attendance; 3) student enrolls and pays fees at university prior to taking course; 4) approval of Dean of S.I.T. needed before enrolling for credit; 5) Graduate College approval required for

students taking course for graduate credit. S

ENERGY AND TRANSPORTATION

110-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2," "3," or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

110-103 Power Mechanics 2 Cr. Internal and external combustion heat engines, mechanical and fluid transmission systems; present and future applications and limitations. Laboratory work emphasized. Special course fee. F-W-S

110-105 Energy Technology 3 Cr. Energy sources and power applications. Economical, political, and environmental ramifications. Conversion, storage, control, instrumentation, transmission, and utilization. F-W-S

110-201 Transportation 2 Cr. Needs, preparation, methods, destination and control of transportation as it relates to society and industry. Special course fee. F

110-204 Electricity/Electronics Fundamentals 3 Cr. Electricity/Electronics, associated phenomena related to basic electrical and electronics systems. Examines devices, operation, application, theory from power devices to electronic devices, controls to microprocessors. Prerequisite: College level mathematics capability. F-W-S

110-209 Power Mechanics—Small Engine Service 2 Cr. Mechanical principles and

functions of small power units. Operation, maintenance, tune-up and overhaul procedures of small two- and four-cycle engines. F-W

110-210 General Motor Mechanics 2 Cr. Consumer knowledge on automobile chassis, internal combustion engine components, fuels, ignition, suspension, and drive systems including service and adjustment techniques. F-W

110-260 Introduction to Fluid Power 2 Cr. Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. F-W-SE

110-270 Circuit Analysis 4 Cr. Introductory concepts and analysis techniques in DC and AC circuit analysis including current, voltage, resistance, capacitance, inductance, impedance, loop and node equations, transients, network theorems, real, reactive, and apparent power in AC circuits. Prerequisites: 355-153 or 355-156, 372-221, Industrial Technology; 355-156 (367-281 corequisite) Applied Technology.

110-272 Microprocessor Interfacing 3 Cr. Various sensors, transducers and controllers are interfaced with emphasis on the hardware/software interaction. Experiments include RS-232 and fiber optic communication, graphics, input and output, temperature and pressure control, and speech synthesis and recognition. Prerequisite: 110-271, or equivalent. F-W

110-280 Networks 4 Cr. Networks based on differential equations. Classical and Laplace transform solution of network equations, complex impedance, introduction to state variable theory, two-port parameters. Frequency response techniques including Fourier series and Fourier

transforms. Prerequisites: 355-255, 110-270.

110-303 Mechanical Power Transmission 3 Cr. Fundamentals of mechanical power transmission: theory of operation, selection of components, suggestions for application, and analysis of systems. F-W

110-308 Thermodynamics of Internal Combustion Engines 2 Cr. Fuels, oxidants and propellants; combustion, combustion processes and gas laws. Prerequisites: 355-120, 355-121 and 372-221. W

110-314 Chassis and Ride Control 2 Cr. Automotive suspension systems, ride control and brakes. Laboratory work on wheel alignment, balancing, steering systems, and brake rebuilding. Prerequisite: junior standing. W

110-315 Cooling and Heating 1 Cr. Theory of operation, typical routine service and component diagnostic procedures for automotive air conditioning, heating and cooling systems. W

110-343 Introduction to Solid-State Electronics 3 Cr. Theory and use of discrete and integrated solid-state devices. Application and use of selected laboratory equipment and devices. Prerequisite: 110-204. F-W

110-344 Electric Power & Distribution 2 Cr. Single and polyphase residential, commercial, industrial wiring systems, codes and standards. Prerequisite: 110-204. W

110-348 Motors and Generators 2 Cr. Rotating machinery concepts; D.C. generators, motors; synchronous motors, generators; induction motors; controls. Prerequisite: 110-204. F-W

110-361 Industrial Hydraulics 2 Cr. Theory, operation and construction of hydraulic systems and circuits; pumps, reservoirs, lines, control valves and actuators. Prerequisite: 110-260. F

110-362 Industrial Pneumatics 2 Cr. Theory, operation and construction of pneumatic and pneumatic/hydraulic system components, with application to basic industrial circuits; compressors, plumbing, control valves and actuators. Prerequisite: 110-260. W

110-371 Solid State Electronics 3 Cr. Basic semiconductor theory for solid state devices including diodes and transistors. Biasing and small signal analysis of transistor amplifiers. Introduction to operational amplifiers and integrated circuit terminology. Prerequisite: 110-270.

110-372 Electromechanical Energy Conversion 3 Cr. Concepts in electromechanical energy conversion, DC motors and generators, AC alternators, AC synchronous motors, poly and single phase induction motors, motor starting and speed control circuits. Prerequisite: 110-371.

110-376 Electronics Fabrication Laboratory 2 Cr. Overview of thick-film/thin-film microelectronics -fabrication, design and application. Printed circuit-board design and fabrication, and principles of soldering. Prerequisite: 110-371.

110-381 Linear Electronic Circuits 3 Cr. Analysis of integrated and discrete transistor circuits including common transistor arrays, analog signal processing using operational amplifiers, negative feedback amplifiers, high and low frequency response, low frequency response, low frequency class A and B power amplifiers and electronic voltage regulator circuits. Prerequisite: 110-371.

110-411 Electrical Circuits and Tune Up 3 Cr. Diagnosing problems in automobile electrical, fuel and exhaust systems. F

110-473 Digital Circuits 3 Cr. Introduction to basic function and operation of logic gates, logic circuit families, Boolean Algebra and number systems. Also includes an introduction to logical building block - flip flops and memory elements. Prerequisite: 110-371.

110-482 Electronic Communication Fundamentals 3 Cr. Investigation of amplitude modulation, frequency modulation, single-side band and pulse modulation electronic communication systems. Theory of modulation and demodulation, noise and a study of transmitter and receiver configurations. Prerequisites: 354-331, 110-381.

110-489 Business and Industrial Internship 2-8 Cr. Off campus work and study in an approved paraprofessional position in business and industry. Salaried appointments in area of student concentration with cooperating companies for a semester or summer session. Prerequisite: junior standing or consent of department.

110-505 Energy Alternatives 2 Cr. Present and future energy sources, conservation, use in home, transportation and industry. F-W

110-506 Energy Management 2 Cr. Evaluate industrial facilities and equipment for energy efficiency and feasibility of modification for improving consumption; current and alternative techniques for overcoming energy loss. F-W

110-511 Carburetion and Emission 2 Cr. Operational principles, diagnostic procedures and defective component repair of fuel and emission control systems. Prerequisite: 110-411. W

110-517 Applied Integrated Circuits 3 Cr. Application of integrated circuits in analog/digital systems: analog measurement, data conversion and introduction to microprocessors. Prerequisite: Ten credits in Physics and/or Electronics. W

110-523 Service Management 2 Cr. Auto service management, planning and layout of service facilities, selection of tools and equipment, and development of curriculum and/or work schedule. W

110-541 Digital Logic Systems 3 Cr. Digital circuit design and analysis using counters, registers and logic gates. Semiconductor memories -random access memories, read only memories, analog to digital converter, and digital to analog converters, arithmetic logic unit, multiplexers and demultiplexers. Prerequisite: 110-473.

110-542 Computer Applications in Electronics 3 Cr. Microprocessor application at a system level. Use of hardware and software design aids such as: assemblers, text editors, compilers, read only memory emulators and system projects related to specific microprocessors. Introduction to the 16 bit microprocessors, 8 bit slice processors, signal processors and controllers. Prerequisite: 110-575.

110-543 Linear Circuits 3 Cr. Linear discrete and integrated solid-state devices used in amplifiers, oscillators, other practical circuits. Application and use of selected laboratory equipment and devices. Prerequisite: 110-343. F-W

110-551 Introduction to Microprocessors 3 Cr. The examination of the working components of a simple microprocessor system, machine language programming, registers, memory, input-output and application such as: security, energy monitor, control, communication, transportation, etc. Prerequisites: 300-101 and basic electronic background or equivalent. F-W

110-552 Electronic Communications 3 Cr. Electrical/electronic communication systems; modulation, demodulation, r.f. and i.f. amplifiers, alignment, antennas, composite TV signal, receivers, transmitters. Prerequisite: 110-204. F

110-553 Instrumentation and Control 3 Cr. Industrial measurement, control, open loop, closed loop, analog, digital, electric/electronic, fluidic, mechanical, pneumatic. Prerequisite: 110-371. W

110-554 Electronics/Robotics 3 Cr. Robotic power and control systems, including base power sources, microprocessor controllers, data handling and programming. Special features such as voice synthesis, motion detection, light detection and noise detection are overviewed. Prerequisites: 110-551, 110-204.

110-556 Digital Circuits 3 Cr. Logic gates; Boolean algebra; number systems, codes and operations; combinational, sequential, arithmetic logic, memories. Prerequisite: 110-343. F-W

110-573 Computer Technology 4 Cr. A detailed investigation in the design, manufacture and operation of computer and

peripheral integrated circuits, including microprocessors, microcomputers, ROM, RAM, EPROM, bubble memory and various LSI circuits. Prerequisites: 110-517, 372-518, or equivalent. F

110-574 Microprocessor Fundamentals 3 Cr. Overview of present day microprocessor technology. Function, analysis and operation of selected microprocessors. Memory, input/output interfacing devices. Basic machine/assembly and structured language programming and hardware application. Prerequisite: 110-371.

110-575 Microprocessor Interfacing 3 Cr. Interfacing principles of microprocessor based microcomputer systems. Input/output techniques, input/output mapping, asynchronous/synchronous communication, parallel/serial conversion. Microprocessor application such as control systems, energy monitor, cooking and communications. Prerequisite: 110-574.

110-582 Electronic Communication Systems 3 Cr. Modern communication systems including transmission lines, wave guides, electromagnetic propagation, basic antenna theory. Introduction to digital communication including bit error probability, digital filtering, pulse code modulation and error detecting and correcting codes. Prerequisite: 110-482.

110-583 Fundamentals of Control 4 Cr. Analysis of elementary control systems via classical and Laplace transform techniques, frequency response and root locus plots, block diagrams and transfer functions, open and closed loop systems, stability considerations, digital to analog conversion, microprocessor based control systems. Prerequisites: 110-280, 110-574.

110-584 Microwave Systems 3 Cr. Introduction to microwave theory, devices and applications, transmission lines and antennas, waveguides and associated components, microwave tubes, microwave solid state devices, MASER's, LASER's and basic concepts in infrared radiation and detection. Prerequisite: 110-482.

110-585 Electric Power Distribution 3 Cr. Characteristics of large scale commercial power distribution systems, properties of transmission lines, power and frequency control in interconnected systems, load flow analysis using symmetrical components, fault analysis and load shedding techniques, stability, underground power transmission and DC power transmission. Prerequisites: 110-280, 110-372.

110-586 Instrumentation 3 Cr. Descriptive and analysis of thermal, mechanical, acoustic, optical, pneumatic and electromagnetic sensors, measuring systems, calibration, performance of measuring systems, analog and digital signal conditional. Measurement of frequency

and time and analysis and performance of display units. Prerequisite: 110-583.

110-595 Seminar 1-2 Cr. Specific content is designed to upgrade competencies of participants. Content will change to reflect current state-of-the-art in electricity/electronics or power mechanics. F-W

110-603 Problems in Power Transmission 3 Cr. Analysis of power transmission problems. Recommendation of alternate solutions including advantages, disadvantages and economic considerations. Prerequisites: 110-240, 110-260, 110-303, 110-348, 110-548 or consent of instructor. W

110-614 Transmission and Drive Trains 2 Cr. Power transmission through gears, clutches and drives common to the automobiles. Fluid couplings, gear sets, differentials, transmissions and drive lines. Prerequisite: 110-314. W

110-615 Engine Machining and Rebuilding 3 Cr. Rebuilding of fourstroke cycle engines including all necessary precision machining; cylinders, blocks, valve trains and reciprocating parts. Prerequisite: junior standing. F-W

110-622 Automotive Practicum 2 Cr. Troubleshooting and servicing all automobile functions as typically done in an auto service facility. F

110-630 Aviation/Aerospace Studies 3 Cr. Classroom, field and optional flight experiences relating to aviation and aerospace industries; details of space exploration, federal licensing regulations, air traffic control and related career guidance information. F

110-631 Private Pilot's Ground School 3 Cr. Preparation for F.A.A. Private Pilot's Certificate: airplane utility, flight manuals, safety, federal aviation regulations, navigation, communication, weather, general aircraft operation and flight theory. F-W

110-635 Introduction to Flight 2 Cr. Flying a single-engine aircraft: applied flight theory, dual flight instruction and solo flight. Prerequisite: 110-631.

110-640 Techniques for Network Analysis 3 Cr. Differential equations applied to electric circuit parameters, network equation solutions using digital and analog computers. Prerequisites: 110-204 and 355-255. W

110-683 Control Systems 3 Cr. Introduction to modern control theory, state variable theory of control systems, controllability and observability, stability of linear and nonlinear systems, discrete time control systems, elementary concepts of optional control systems, control law implementation using microprocessors. Prerequisites: 110-583, 355-275 (corequisite).

110-689 Development Practicum 4 Cr. Project research and design, specification control drawing documentation. Project construction and a technical paper presentation. Prerequisite: advanced standing.

110-695 Automotive Service Experience 2 Cr. Off-campus job in garage or dealership provides skills and knowledge of automotive servicing beyond classroom and laboratory work. W

GRAPHIC COMMUNICATIONS

130-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

130-100 Communications 2 Cr. Communication concepts of source, message, receiver, feedback and interference studied in the context of communication/information technology. F-W-S

130-103 Communication and Information Technology 3 Cr. Limits and possibilities of various communication components and systems applied to the solution of communication problems in business and industry. Intended for General Business Administration students. Credit not available to students who have completed 130-100. F-W-S

130-110 DRAFTING 2 Cr. Projection concepts for representing 3-dimensional forms on 2-dimensional surfaces; shape and size description and drafting techniques. F-W-S

130-120 CONSTRUCTION DRAFTING 2 Cr. Architectural drafting with emphasis on theory and delineation. Drawing media and equipment are utilized in solving problems relating to building construction. F-W

130-140 Graphic Arts 2 Cr. Concepts of reproducing visual images; design and layout, composition, photo conversion, image carriers, image transfer, finishing and binding, and economics of graphic arts. F-W-S

130-180 Hospitality/Living/Institutional Facility Planning 2 Cr. Basic architectural drafting and design content, concepts, media, techniques, and methods to record and communicate ideas and solve problems. F-W-S

130-212 Descriptive Geometry 3 Cr. Graphic representation and solution of space problems involving points, lines, planes, intersections, revolutions and vectors. Prerequisite: 130-110. F

130-221 Architectural Design I 3 Cr. Develop graphic simulation techniques and problem-solving abilities; site planning, space requirements, housing codes, structure, light frame construction, solar and earth integrated designs, mechanical and electrical systems. Prerequisites: 130-110 or 130-120 or 130-180 or consent of instructor F-W-S

130-234 Interactive Graphics 2 Cr. Interactive graphics in design and drafting: computer, teletype, CRT terminal, digitizer and plotter. Prerequisite: 130-110. F-S

130-246 Typography 2 Cr. Printing and art mediums, photography, layout and keylining, type classification and selection, composition practices, color systems and materials. Lab work in preparing copy for production. Prerequisite: 130-140 or consent of instructor. F-W

130-251 Composition 3 Cr. Photo-typesetting: photo-lettering, text and editing systems; pasteup and copy preparation techniques; copyfitting, word and image processing, telecommunications and interfacing to computer systems. Prerequisite: 130-140 or consent of instructor. F-W

130-263 Flexography and Gravure 2 Cr. Flexographic and rotogravure printing processes. Design for flexo and gravure, film and image assembly, plate and cylinder preparation and printing by the two processes. Present applications and future trends. Prerequisite: 130-140.

130-290 Mechanics of Solids I 3 Cr. Technical calculations, dimensional analysis, freebody diagrams, force systems and equilibrium, friction, elementary statically determinate framed structures, and simple stress. Prerequisite: 372-221. F-W

130-291 Mechanics of Solids II 3 Cr. Stress and strain, torsion, bending of beams, compound stress, principal stress, deflection of beams, statically indeterminate members and columns. Prerequisites: 130-290, 355-154. W

130-311 Technical Drafting 3 Cr. Drafting concepts and techniques in manufacturing industries; graphic language of orthographic projection for use in design, assembly, manufacturing and sales. Prerequisite: 130-110. F-W-S

130-325 Architectural Design II 3 Cr. Programming and analysis, design solution, presentation and design development drawings for commercial and/or public buildings; scale, site, codes, energy, acoustics, structure and their relation to form. Prerequisite: 130-221. F-W

130-341 Graphic Communications Processes 2 Cr. Offset lithography, relief, screen printing and high contrast photog-

raphy for general industrial arts teacher. Prerequisite: 130-140. W

130-355 Line and Halftone Photography 2 Cr. High contrast photography in graphic reproduction processes; dealing with line, halftone, duo-tone, and special-effect film negatives and positives. Prerequisite: 130-140 or consent of instructor. F-W-S

130-359 Image Assembly and Platemaking 2 Cr. Pre-press operations and systems. Imposition, film assembly, contacting, proofing, offset platemaking and automated pre-press systems. Prerequisite: 130-140.

130-366 Image Transfer 3 Cr. Preparation of image carriers and printing on paper and other substrates; lithography, flexography, gravure, screen printing, electrostatics, and associated procedures for transferring images from film to substrate; reproducing line and half-tone copy in one or more colors; image/film assembly, step and repeat, multiple page imposition, platemaking, press systems, densitometry, ink, paper problems and quality control. Prerequisite: 130-140 or consent of instructor. F-W

130-370 General Binding 2 Cr. Finishing, fastening, and covering printed materials: mechanical, loose-leaf, wire staple, sewn and perfect binding. Prerequisite: 130-140 or consent of instructor. F-W-S

130-414 Technical Illustrating 1-3 Cr. The presentation of a highly organized approach to learning technical pictorial drawings. Emphasis is on isometric views, inking techniques, and preparation of original art to final product. Prerequisite: 130-212. F-W-S

130-424 Architectural Technology 3 Cr. Space programming and planning, working drawings for commercial and industrial buildings. Building codes, energy requirements, construction contract documents, structural materials and systems, building materials and systems. Prerequisite: 130-110 or 130-120. F-W

130-433 Tool and Die Design 2 Cr. Design and application of jigs and fixtures, selection of tooling materials, tolerancing gauges for checking work, stamping die design and mold design. Prerequisites: 130-311 and 372-325. F

130-475 Printing Economics 3 Cr. Estimating production costs, specification of equipment, production scheduling, facility planning, materials inventory and control, and systems that expedite graphic reproductions. Prerequisite: 130-140. F-W

130-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session.

Prerequisite: junior standing or consent of department. F-W-S

130-504 Communications and Information Systems 1-3 Cr. Overview of the communications industry. Use of systems to create, process, transmit, receive and evaluate information. Prerequisite: 130-103. F-W-S

130-505 Office Automation Technology 3 Cr. Automation information concepts and technology used in office including both communication, storage, and retrieval systems. Emphasis on cost effective selection and implementation problems. Prerequisite: 130-103 or Consent of instructor F-W-S

130-506 Introduction to Telephony 2 Cr. Principles of current technologies, systems, and trends in telephone communication systems design and applications. F-W-S

130-526 Building Construction Specifications 2 Cr. Construction specification organization and basic specification preparation skills; role of specifications in building process and relationship of specifications to other construction contract documents. F-W

130-527 Site Engineering 2 Cr. Use of surveying instruments, techniques and computation to measure and describe land configurations; construction surveying including contours, grades, cut and fill, and drainage; soil analysis. Prerequisites: 130-110 and trigonometry. F-W-S

130-528 Structural Design 3 Cr. Analysis, selection and delineation of concrete, steel and wood structural components and systems in buildings. Prerequisite: 130-291 or 372-325. F

130-532 Mechanical Design 4 Cr. Analysis and design of machine elements: gearing bearings, shafting and friction devices. Prerequisites: 130-230 or 130-593, 372-325 or 130-291, 355-153 or 355-156. W

130-537 Mechanical Design Drafting 2 Cr. Design of a machine, specifications, layout, calculations, bills of material, detail and assembly drawings. Prerequisite: 130-311. F

130-543 Graphic Arts Production Techniques 2 Cr. The study of techniques associated with the production of two-dimensional printed media, with emphasis on design, production and evaluation, also including client and printer relationships. Prerequisite: 130-366. F-W-S

130-557 Color Separation 2 Cr. Color separation from reflected and transmission copy; filters and densitometry; direct and indirect photographic color separation methods. Prerequisite: 130-355 or consent of instructor. W

130-561 Screen Printing .5-2.0 Cr. Screen printing technology-applications, components and techniques. Survey of various materials and equipment used in screen printing. Production of screen printed products. Prerequisites: 130-140 or 214-592 or 304-518, the above courses OR consent of the instructor is required. F-W

130-592 Mechanics of Machinery I 3 Cr. Dynamics of machinery: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power and energy; balancing and vibration. Prerequisites: 130-290 and 355-154. W

130-593 Mechanics of Machinery II 3 Cr. Graphical analysis and synthesis of linkages, cams, gear trains, displacement, velocity, acceleration and dynamic forces. Prerequisite: 130-592. F

130-595 Seminar 1-2 Cr. (Title will reflect specific graphic and industrial communication content). Current and projected communication methods, concepts, technologies and innovations in graphic communications. S

130-629 Land Use Planning 3 Cr. Area planning; problems in design of building complexes; exterior space, land use, relationships between buildings and supporting facilities; contemporary regional and city planning and its historical roots. Prerequisite: 130-325. F-W

130-636 Computer Assisted Design Problems 2 Cr. Computers in drafting and plotted design, design automation, mechanical design problem analysis for computers, mathematical and simulation models. Prerequisites: 130-230 and 354-141. W

140-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

140-271 Safety Principles And Practices 3 Cr. Principles of accident prevention; school safety programs; identification of resources and content: motor vehicle, home, public, farm, industrial, school, recreational and civil defense. FE

140-375 Driver and Traffic Safety 3 Cr. Classroom phase of driver education: curriculum selection and use, instructional resources and materials, and driver education administration. FO

140-377 Driver Education Laboratory Methods and Techniques 3 Cr. Role, aims and objectives of laboratory programs in driver and traffic safety education; multi-

ple-student teaching techniques, simulation on-street behind-the-wheel and multiple-car driving range experiences provided. SO

140-574 Alcohol, Drugs and Accident Prevention 2-3 Cr. Impact of alcohol and drug use on accident prevention programs; current efforts to rehabilitate alcohol and drug abusers. SO

140-575 Behavioral Approach to Accident Prevention 2-3 Cr. Behavioral aspects of accident prevention from physiological, psychological, sociological and cultural perspectives; identifying, understanding and modifying attitudes and behavior. SE

140-580 Driver Education for the Handicapped 2-3 Cr. Curriculum content, instructional methods and techniques, legal implications, driving aids and financial assistance; lab work in teaching handicapped people to drive. S

140-581 Principles of Occupational Safety 2-3 Cr. Overview of occupational accident prevention programs: techniques of measurement, cost of accidents, locating and identifying accident sources and problems of selecting corrective action. Prerequisite: junior standing. F-W-S

140-583 Voluntary OSHA Compliance 2-3 Cr. Implications of Federal Occupational Safety and Health Act of 1970 on industrial operations, systematic self-inspection and compliance procedures. F-S

140-584 Safety Engineering Standards 2 Cr. Analysis of legal and voluntary industrial workplace standards and regulations. F

140-586 Fire Protection/Prevention 3 Cr. Behavior of fire: chemistry, protection, prevention and control. W

140-587 Human Factors Engineering 3 Cr. Man's physiological and psychological abilities in man/machine interface, working performance, reliability, comfort and safety; effective design of man and work environment as a cybernetic system. Prerequisites: 479-110, 354-130 or consent of instructor. F

140-588 Construction Safety 2 Cr. Analysis of hazards, control procedures and systems related to typical construction equipment, tools and materials safety problems. F-W

140-589 Fleet Safety Management 2 Cr. Controlling loss associated with motor fleet operations: selection, training and supervision of commercial drivers; regulatory controls. W

140-590 Products Liability 2 Cr. An analysis of products liability losses, laws and controls. W

INDUSTRIAL MANAGEMENT

150-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairman. F-W-S

150-X97 Field Experience 1 Cr. F-W-S

150-X98 Field Experience 2 Cr. Off-campus work and study in an approved position to better understand business and industrial concepts and practices. F-W-S

150-115 Understanding Business and Industry 2 Cr. Concepts, functions, and interrelationships of various subdivisions of service and production organizations. F-W

150-150 Industrial Organization 2 Cr. Basic functions and interrelationships of major subdivisions of industrial organizations. Prerequisite: Industrial Technology major or instructor consent. F-W

150-200 Production/Operations Management 3 Cr. A broad analytical "systems" viewpoint is used to develop competency in management decision-making and problem solving in an operations setting. F-W-S

150-220 Quality Control for Service Industries 3 Cr. Method, procedures and administration of quality technologies for business and service industries. Analysis, documentation of standards and applied research.

150-304 Principles of Business Management 3 Cr. Basic managerial functions: planning, organizing, staffing, directing and controlling; management principles with universal applications; nature of authority and responsibility, departmentation, line and staff relations; enterprise manager in his social setting, comparative management; and management and the future. F-W-S

150-450 Maintenance Management 2 Cr. Organization and management of facilities management system: administration of maintenance forces, maintenance of personnel, planning and scheduling of work, maintenance of basic environmental systems, project control and cost control for maintenance operations. F-W-S

150-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Prerequisite: junior standing or consent of department. F-W-S

150-500 Engineering Economy 2 Cr. Source and application of funds: cost con-

trol, valuation, depreciation, replacement theory and taxation. F-W-S

150-501 Seminar 1-2 Cr. (Title will reflect specific business or management content.) Current topics in business and industrial management to meet specific needs of students enrolled. F-W

150-502 Time Management 1 Cr. Elements of time management, strategies and techniques in industrial and business environments. Analysis of time use by all levels of management.

150-505 Product and Inventory Control 3 Cr. Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling material, parts, sub-assemblies, and final assemblies of a manufacturing system. Prerequisite: 150-200 or 354-130 or 354-530. F-W

150-510 Production Processing 3 Cr. Production processes, especially product design as related to economic production; factors that influence choice and sequence of process to obtain end product. Prerequisite: 150-200. F-W

150-514 Industrial Enterprise Practicum 3 Cr. Organization and operation of an industrial company; election, designing, production planning, production, marketing and distribution of a product. Prerequisite: 150-115 or 150-150. F-W-S

150-520 Quality Assurance 3 Cr. Practical and statistical quality control in design and use of Quality Assurance Programs: Quality Engineering, Manufacturing Quality Assurance and Product Quality Assurance. Prerequisites: 150-200, 354-130 or 354-530. F-W-S

150-530 Material Handling 3 Cr. Principles of material handling; handling function, its role in production activities and problems of handling materials in industrial settings. Prerequisite: 150-200. F-W

150-540 Time and Motion Study 3 Cr. Methods engineering in business and industry: improving methods of performing and measuring work done by individuals or groups through motion analysis, charting techniques and principles of motion economy. Prerequisite: 150-200. F-W-S

150-550 Plant Layout 3 Cr. Principles and methods of solving plant layout and material handling problems. Prerequisite: 150-200. F-W

150-570 Estimating and Analyzing Construction Costs 3 Cr. Estimating and analyzing material, man-hours, equipment, methods of construction, overhead and profit and submitting these factors in the form of a bid. Prerequisites: 150-X98 and junior standing. F-W

150-600 Organizational Leadership 3 Cr. Supervisor's role in attaining organiza-

tional objectives through human resources management; supervisory skills of communication, motivation, initiation of change, discipline, delegation and grievance handling developed on basis of organizational and individual behavior concepts. Prerequisite: senior or graduate standing. F-W-S

150-605 Production and Inventory Control Practicum 2 Cr. Application of principles and techniques learned in 150-505 as part of Professional Semester/Manufacturing Laboratory. Prerequisite: 150-505.

150-620 Quality Assurance—Practicum 2 Cr. Application of principles and techniques learned in 150-520, as part of Professional Semester/Manufacturing Laboratory. Prerequisite: 150-520.

150-630 Quality Circles 2 Cr. Background and history of participative management in Japan and America, orientation as to the structure and sequential development of quality circles, industrial quality control data gathering techniques, problem solving methods, organizational politics, and meeting management methods simulated and analyzed. S

150-640 Time and Motion Study Practicum 2 Cr. Application of principles and techniques learned in 150-540, as part of Professional Semester/Manufacturing Laboratory. Prerequisite: 150-540.

150-650 Introduction to Operations Research 4 Cr. Business and industrial applications of operations research techniques using linear programming, decision models and Monte Carlo methods; problem applications in allocation, sequencing, waiting lines and competitive strategies. Prerequisite: 150-200. W

150-660 Industrial Management 2 Cr. Principles and methods of analyzing and solving industrial problems; application through case studies, management games and special problems. Prerequisite: senior standing. S

150-670 Systems Approach to Construction Management 3 Cr. Total concept of construction industry: contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques. Prerequisite: 150-570. F-W

150-680 Production Management Practicum 2 Cr. Application of principles and techniques of analyzing and solving production management problems learned in prior course work to manufacturing project in manufacturing laboratory. Prerequisite: consent of instructor. F-W

BUSINESS ADMINISTRATION

160-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails

recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

160-X98 Business Administration Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the challenges of being an effective manager. F-W-S

160-100 Introduction to Business Administration 1 Cr. Basic business systems processes, their interrelationships and role of business environment. Business Administration Program: advisement, course sequence and job opportunities. Prerequisite: consent of instructor or Business Administration major. F-W

160-105 Fundamentals of Financial Accounting 2 Cr. Introduction to financial accounting concepts including financial statements, depreciation, inventory cost flow, accounting cycles, balance sheets, ratio analysis and budgets. (Not for Business Administration majors). F-W

160-206 Accounting I 3 Cr. Theory of debit and credit, principles of accounting records, modern business papers, working sheets, balance sheets and income statements, sole proprietorships and partnerships. Prerequisite: sophomore standing. F-W-S

160-207 Accounting II 3 Cr. Development of basic accounting theory from 160-206: partnership and corporate forms of organization; branch and manufacturing accounting; cost accounting, budgeting and analysis and interpretation of financial statements. Prerequisite: 160-206. F-W-S

160-230 Small Business Management 3 Cr. Introduction to the various aspects of business management, especially at the level of small business. Prerequisite: junior standing. F-W

160-231 Fundamentals of Industrial Marketing 2 Cr. An examination of the industrial marketing place. Emphasis is placed upon understanding the unique characteristics of the industrial marketing environment and developing an understanding of how these characteristics are integrated into an industrial marketing program. Prerequisites: 320-201 or 320-210 and sophomore standing.

160-232 Fundamentals of Marketing 2 Cr. Overview of basic functions of marketing, including product development, promotion, distribution, market research and pricing. Not available for students who have completed 160-330. Prerequisite: 320-201 or 320-210. F-W-S

160-260 Introduction to International Business 3 Cr. Introduction to the interaction of foreign business, politics, culture, societies on basic international business sys-

tems. Basic terminology of International Business is of primary importance. Prerequisite: sophomore standing F-W-S

160-310 Management Information Systems 2 Cr. Improving the practice of management through the design and utilization of management information systems. An information system aids management in making, carrying out, and controlling decisions. Prerequisite: 150-200 or 160-304. F-W

160-312 Cost Accounting 3 Cr. Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting. Prerequisite: 160-207. F-W

160-318 Business Law I 3 Cr. Introduction to law, contracts, agency nature and types of negotiable instruments. Prerequisite: junior standing. F-W-S

160-319 Business Law II 3 Cr. A continuation of Business Law I; includes security devices, insurance, agency, employment, partnerships, corporations, real property, estates and bankruptcy, government and business; a study of the effect of the Uniform Commercial Code on the above-mentioned areas of business law. Prerequisite: 160-318. S

160-320 Income Tax Accounting 3 Cr. Principles for determining taxable net income; computation of federal and state income taxes for individuals, partnerships and corporations. Prerequisite: 160-206.

160-323 Retail Merchandising and Management 3 Cr. Retail sales promotional techniques: display, layout, retail and cooperative advertising, mathematics of merchandising. Retail management problems: store location, types of goods stocked, inventory financing, credit operation. Prerequisite: 160-330. F

160-330 Principles of Marketing 3 Cr. Retail, wholesale, advertising, channels of distribution, cooperative marketing, pricing, marketing research and marketing legislation from consumer's, middleman's and manufacturer's standpoint. Prerequisite: 320-201 or 320-210. F-W-S

160-331 Business Practicum/Marketing 2 Cr. Approved marketing position with Campus Industries to better understand how major elements of marketing function and interrelate. Prerequisite: 160-330 or junior standing.

160-334 Salesmanship and Sales Management 3 Cr. Concepts of selling: locating prospects, securing and conducting sales presentations, analyzing and handling different types of customers, closing sale, maintaining goodwill. Sales organizations: recruitment, selection, training compensation and cost control methods. Prerequisite: 160-330. F-W-S

160-335 Accounting for Management Decisions 3 Cr. Interpretation of financial statements, internal control, budgeting, costing of products manufactured and sold, analysis of cost-volume-profit decisions. Data presented without mechanical techniques. Prerequisite: 160-207. F-W

160-336 Industrial Marketing Management 3 Cr. Examination of the industrial marketing place with emphasis on unique characteristics of the industrial marketing environment. Special emphasis on case study analysis and discussion. Prerequisite: 160-330. F

160-337 Purchasing 3 Cr. Exploration of decision making process used in purchasing goods and services; procurement process, paper flow, economics of purchasing and legal aspects. Prerequisites: 150-200 and 160-330.

160-340 Business Finance 3 Cr. Principles of planning, raising and controlling short- and long-term funds for large or small corporate or non-corporate business enterprises; financial aspects of promotion and organization, sources of financing and administration of income; failure and reorganization. Prerequisite: 160-207. F-W-S

160-341 Business Practicum/Finance 2 Cr. Approved finance position with Campus Industries to better understand how major elements of finance function and interrelate. Prerequisites: 160-340 and junior standing.

160-351 Business Practicum/Supervision 2 Cr. Approved supervisory position with Campus Industries to better understand how major elements of supervision function and interrelate. Prerequisites: 479-582 and junior standing.

160-355 Principles of Risk Management 3 Cr. An overview of the role of management of risks in business with emphasis on identification of risks and evaluation to determine methods of handling them. We will consider all methods with emphasis on insurance. Prerequisite: junior standing. F

160-365 Principles of Real Estate 2 Cr. Real estate law, importance of real estate, nature of real property, interests in real estate, historical background, estates, how created, types of ownership, descriptions, real estate contracts, transfer of title, title records, lease and zoning.

160-370 Principles of Advertising 3 Cr. Psychological, social and economic aspects of advertising in relationship to other aspects of distribution and its place in modern business. Prerequisite: 160-330 or consent of instructor. F-W-S

160-410 Manufacturing Cost Analysis 3 Cr. Emphasis on concepts and techniques of cost analysis. Application of

cost information and discussion of techniques and budgeting for a manufacturer. Prerequisite: 160-206 or 160-400. F-W

160-438 Industrial Distribution 3 Cr. Industrial distribution channels and strategies involved in determining specific channel objectives; channel structure; procedures regarding physical distribution of goods through selected channels; control and evaluation of the adopted channels. Prerequisite: 160-336.

160-461 Business Practicum/Management 3 Cr. Approved management position in Campus Industries to better understand how major elements of management function and interrelate. Prerequisites: 160-331 or 160-341 or 160-351 and senior standing.

160-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Prerequisite: junior standing or consent of department. F-W-S

160-520 Seminar 1-3 Cr. Current topics in business. (Title will reflect specific business content).

160-573 Legal Aspects of Construction 3 Cr. Analysis of contracts and documents used in building construction industry: rights of the parties. Labor relations: law and labor, legality of strikes, legality of picketing and boycott as economic pressure, unfair labor practices, employer and union, rights and responsibilities of supervisor and worker. F

160-585 International Marketing 3 Cr. Principles and policies of marketing goods and services in international markets. Concepts, strategies and policies of world trade and multinational firms. Prerequisite: 160-330.

160-601 Legal Environment of Business 2 Cr. Changing relationship of government and industry: regulatory legislation, administrative agencies, national policies and social control. F-W

160-679 Marketing Research 3 Cr. Experimental and survey techniques to secure information for successful marketing; primary and secondary sources; data collection, compilation and analysis methods; effective communication of conclusions and recommendations to management. Prerequisites: 160-330 and 320-325. F-W

160-690 Administrative and Business Policies 3 Cr. Integrates previous business studies, develops ability to solve business problems through scientific approach to decision-making. Business cases on policy formulation and administration: manufacturing, marketing, finance, accounting, personnel and public relations functions.

Prerequisites: 160-330 and 160-340 and senior standing. F-W

MATERIALS AND PROCESSES

170-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

170-101 Processes—Concepts 3 Cr. Concepts and applications of industrial processes: forming, shaping, molding, casting, joining and finishing of common materials. F-W

170-102 Manufacturing Materials and Processes I 3 Cr. Material properties (metals, plastics, elastomers, wood and composites). Experiences in machining and forming processes such as turning, milling, shearing, drawing, electrical discharge machining, injection molding, extrusion, thermoforming, laminating, reaction injection molding. New developments and trends in materials and processing. F-W

170-103 Manufacturing Materials and Processes II 3 Cr. Common materials used to manufacture products; experiences related to producing metal products by welding, forging, casting and powdered metal molding; application of finishing materials; molding products from ceramic materials; and fastening with adhesives and mechanical fasteners. New developments and trends in materials and processing. Prerequisite: 170-102. F-W

170-202 Metals 2 Cr. Introduction to metals in machining, welding, casting and metal forming; fundamental operations and related technical information. F-W

170-205 Design for Industry 3 Cr. Industrial Research and Development experiences focusing on problems related to product development, innovation and problem solving, manual, semi-automatic and automatic production processes. Development and application of various systems for selection of materials and processing will be studied. Prerequisite: 170-101. F-W

170-209 General Finishing 2 Cr. Technical information and application of finishes to various materials. Color theory, spraying, baking, drying, polishing, spot finishing, and re-finishing. Prerequisite: 170-101 or 170-202.

170-210 Materials of Industry 3 Cr. Characteristics and processing requirements of common industrial materials; material properties, property modification,

processing characteristics and testing criteria of the four material families; material identification, selection, utilization and testing (intended for General Business Administration students). F-W

170-222 Industrial Ceramics 3 Cr. Glasses, construction materials, abrasives, whitewares, refractories, enamels, electronic and nuclear products. Lab work to correlate applications, material properties and production methods. Prerequisite: 311-115 or 311-135. F

170-230 Metal Machining Technology 3 Cr. Basic machine tool concepts providing an operational knowledge of the lathe, milling machine, grinder, drill press and electrical discharge machine (EDM). Introduction to precision measurement techniques and instruments. Prerequisite: 170-101 or 170-202. F-W

170-240 Basic Woodworking 1 Cr. Elementary woodworking: hand tools, hand operations and basic machines; fasteners and wood joints. W

170-241 Machine Woodworking 2 Cr. Wood industry materials and equipment; job planning, organizing and preparation; principles of wood and allied material processing. Prerequisite: 170-101. F-W

170-250 Plastics I 2 Cr. Plastics industry materials and processes; characteristics and properties of thermoplastic and thermosetting materials and processing equipment. Prerequisite: 170-101 or 170-202. F-W

170-270 Light Building Construction 2 Cr. Residential and small commercial structure construction: terminology, materials, tools and equipment. Prerequisite: 170-101 or 170-202. F-W

170-275 Construction Materials 2 Cr. A study of the origin, composition, and basic nature of primary materials of construction (woods, metals, plastics, brick, tile, rock, stone, cement, and glass). Secondly, the selection, specifying, and recommended application procedures of materials with respect to standards and codes. F-W

170-280 Packaging Fundamentals 2 Cr. Relationship to marketing and consumer behavior, control through legal and industrial regulations, function within larger organization, roles of professional engineer, packages and their function. F-W

170-301 Technology, Resources, Environment 2 Cr. Relationship between rate of resource use and environmental degradation; possible consequences of present resource consumption patterns; pursuit of ecologically sound resource consumption patterns more appropriate to presently known available resources. F-W

170-304 Industrial Crafts 2 Cr. Craft industries: tools, processes, products from leather, fiber, metal, plastics, glass, plaster, ceramics, and wood materials. Lab work. F-W

170-313 Wood Technology 3 Cr. Forest management; wood structure, properties, defects, modifying and bonding; testing procedures and trends in wood-based industries. Prerequisite: 170-101. F-W

170-315 Packaging Materials 3 Cr. Origin, composition, properties and application of packaging materials; lab work in packaging and materials testing methods. Prerequisite: 170-280. F-W

170-320 Production Sheet Metal 3 Cr. Forming characteristics of various metal sheets. Conventional and high technology cutting, bending, forming, and joining processes and equipment. Prerequisite: 170-102. F-W-S

170-321 Production Finishing Systems 3 Cr. Selection and management of production finishing systems for manufactured goods. Paint types, properties, methods of application and testing procedures. Systems for applying metallic coatings and other non-organic finishes. Prerequisite: 170-103. F-W-S

170-331 Machine Shop II 2 Cr. Advanced shop practice; sharpening of lathe tools, twist drills, milling cutters, taper turning, grinding externally and on flat surfaces. Gear cutting on milling machine. Heat treating and layout techniques. Prerequisite: 170-230 or consent of instructor. F-W

170-333 Machine Shop III 2 Cr. Spiral milling, tool making, and cutter grinding, cylindrical grinding, maintenance. Prerequisite: 170-331 or consent of instructor. F-W

170-344 Cabinet Work 2 Cr. Problem solving, materials testing and advanced technical information; major cabinetmaking project. Prerequisite: 170-241. F-W

170-346 General Woodworking 2 Cr. General unit shop organization, upholstery and wood turning; organizing and presenting content in woodworking as it relates to total Industrial Arts program. Prerequisite: 170-101. W

170-357 Metal Casting Processes 3 Cr. Development of selected metal casting processes through design, pattern construction and casting. Select casting processes for production applications. The role of computers and robots as tools of the casting industry. Visual and metallurgical analysis of castings. Prerequisite: 170-103 or instructor's approval F-W

170-365 Production Welding Technology 3 Cr. Fundamental concepts of welding and cutting processes. Set-up and/or operational knowledge of common welding

and cutting processes. Metallurgical effects of welding on metals and tests for welds. Operational knowledge of robots in welding, welding codes and symbols. Prerequisite: 170-103 or instructor's approval F-W

170-370 Commercial Building 2 Cr. Structural building systems and related mechanical installations. Prerequisite: 170-270. F-W

170-372 Heating and Air Conditioning 3 Cr. Heating, heat energy, heating systems, calculation of heating loads, heating drawings, burners and control systems. W

170-373 Concrete Technology 3 Cr. The principles of cement and concrete (ingredients, mixing, placement, finishing, curing, properties, and applications). Prerequisite: 170-270. F-W

170-380 Packaging Systems 3 Cr. Packaging from design through production; lab work on structural design, sample making and package evaluation. Prerequisite: 170-280. F-W

170-385 Packaging Machinery 3 Cr. Equipment that measures, forms, fills, seals, cartons, cases, uncases and labels; functional capabilities of speed, material characteristics, carton size and operating characteristics. W

170-401 Solid Waste Technology 3 Cr. Solid wastes and processing technology; recovering some economic benefits.

170-480 Packaging Design and Evaluation 3 Cr. Chemical and physical protection problems; materials, structure, graphics and regulations in package design; shock and vibration forces in package evaluation; practical applications of evaluation using electronic instrumentation. Prerequisite: 170-380. F-W

170-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Prerequisite: junior standing or consent of department. F-W

170-502 Engineering Data Bases for Manufacturing 3 Cr. Classification and coding, and formation of a Group Technology system. Modification of existing software for Computer Aided Process Planning to serve specific needs. Information storage and retrieval systems. Development of Computer Integrated Manufacturing data bases. Technical and human factors affecting workers. Prerequisite: 170-504 or 150-510 or consent of instructor F-W-S

170-504 Computer Aided Manufacturing 3 Cr. Justification for and application of computer assistance in manufacturing process; machine process control, inventory and materials handling, robotics and

automated assembly, product design and part grouping in relation to total manufacturing operation. Prerequisites: 170-101, 170-202 and 354-141 or consent of instructor. F-W

170-505 Robotics 2 Cr. Capabilities of and justification for industrial robots; lab work with robots and simulators in processing, assembly and materials handling. Prerequisites: 170-101 or 170-202 and 170-504 and 354-141 or consent of instructor. F-W

170-506 Maintenance of Processing Equipment 3 Cr. Recondition, identify and correct common malfunctions of hand and power woodworking and metalworking equipment; manufacturers' performance specifications, cutting tool specifications and preventive maintenance schedules; selection of hand tools, power equipment, measuring instruments and safety devices. F-W

170-508 Industrial Metrology 3 Cr. Measurement of heat, moisture, speed, fluid flow, material properties, and angular and linear dimensions for parts production and process control. Theory and application with major emphasis on dimensional metrology. Introduction to statistical process control and nondestructive testing. Prerequisites: 170-102, junior standing or consent of instructor F-W-S

170-510 Manufacturing Systems 3 Cr. Dedicated, flexible, and standard manufacturing systems. Selection and application of standard production components and tooling to produce and evaluate a given product. Emphasis on integrated inspection, part transfer, production, and robot application. Prerequisite: 170-504.

170-511 Production and Transfer Tooling 3 Cr. Tooling for machining, locating, and transferring multiple parts for fixed and flexible manufacturing. Set-up and development of tooling for robots, Computer Numerical Control (CNC) machines and other production equipment. Transfer line tooling. Prerequisite: 170-504. F-W-S

170-513 Manufacturing Processes: Wood Products 3 Cr. Primary and secondary manufacturing processes including machining theory, computerized planning systems, Numerical Control (NC) machining applications, optically controlled laser engraving/cutting, product development and production systems. Prerequisite: 170-313. F-W-S

170-515 Metallurgy 3 Cr. Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys. Prerequisite: 311-115. F-W

170-537 Numerical Control in Manufacturing 1-3 Cr. Investigation and justification of numerical control of machine tools; types of control units and systems, feedback systems, manuscript writing and manual programming, tape punching and machine set up, fixture design and tool setting; working knowledge of basic machining processes recommended. Prerequisite: 170-101 or 170-202. F-W

170-559 Foundry Seminar 1-2 Cr. Metallurgy principles relating to casting processes; sand testing, phasing diagrams, fluid mechanics, gates, risers, gating systems, inspection, non-destructive testing.

170-560 Aircraft Construction Workshop 1-3 Cr. Thorough study of proved plans precedes completion of assignments in fabrication of parts, assembly, rigging, powering and finishing full-scale aircraft. Prerequisite: consent of instructor or degree in Industrial Education. S

170-565 Welding II 2 Cr. Advanced work in arc and oxy-acetylene welding techniques; vertical, horizontal, overhead positions; destructive and non-destructive testing; MIG and TIG welding processes; oxy-acetylene machine and air carbon arc cutting. Prerequisite: 170-365. W

170-570 Mechanical Systems 2 Cr. Plumbing and electrical requirements for residential and commercial buildings. Prerequisite: 170-370. W

170-575 Building Construction Practicum 2-4 Cr. Technical information, construction problems and actual development of light residential structure. Prerequisite: 170-270. S

170-580 Packaging Development 3 Cr. Applications of packaging functions: developing a product's complete packaging system, from final production of product to consumer. Prerequisite: 170-480. F-W

170-585 Packaging Seminar 2 Cr. Current packaging problems or developments (subject based on students' interests and current issues). Prerequisite: junior or senior standing in Packaging. F-W

170-595 Seminar 1-2 Cr. (Title will reflect specific materials and processes content.) Designed to upgrade effectiveness of teachers or secondary school materials and processes content.

INDUSTRIAL TEACHER EDUCATION

190-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

190-160 Introduction to Industrial Education 2 Cr. An introduction to current programs, facilities and opportunities in teaching industrial arts, vocational, technical and adult education. Students develop personal goals, complete program plan sheets, visit schools and work as teacher aides. F-W

190-205 Methods of Teaching Industrial Education 2 Cr. Study of teaching methods in use in youth and adult shop classes. Instruction planning; lesson presentation with video tape equipment; methods of organization and management; instruction aids; professional ethics. Prerequisite: 190-160. F-W-S

190-390 Laboratory/Classroom Management in Industrial Education 2 Cr. An overview of principles of facility planning and equipment selection for a variety of curriculum needs. Laboratory and classroom management techniques will be presented with an emphasis on safety requirements and managing various delivery systems used in contemporary programs. Prerequisite: 190-160. F-W-S

190-403 Student Teaching Elementary Industrial Arts 2 Cr. Directed teaching at the elementary level in selected off-campus schools. Prerequisites: 190-160, 190-205, 190-405, 190-406.

190-405 Curriculum Development in Industrial Education 2 Cr. Study of curriculum terminology and methods of selecting and organizing content for industrial education courses. A course of study and individualized instruction will be developed by the student for use in teaching a class in industrial arts or vocational education. Prerequisites: 190-160 and 190-205. F-W-S

190-406 Instructional Evaluation in Industrial Education 2 Cr. For industrial arts and vocational/technical teachers in evaluating program and student performance: basis for student assessment, evaluation of manipulative activity and construction of teacher-made tests as applied to all students (including those with special needs). Student evaluation of instructor and instruction. Prerequisites: 190-205 and 190-404. F-W-S

190-407 Student Teaching in Industrial Education 5 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisite: Must hold teaching certificate in an area other than Industrial Education.

190-408 Student Teaching 8 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisites: 190-404 and overall G.P.A. of 2.25; satisfactory health, speech and English. F-W

190-488 Internship Teaching 8 Cr. An alternate method of obtaining student teaching experience. Teacher interns re-

ceive a license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisite: 190-404. F-W

190-505 Sport Aviation Seminar 1-3 Cr. Organizational patterns, available alternatives, and recommended procedures for incorporating full-scale aircraft construction in schools.

190-520 Seminar: 1-3 Cr. Current topics in industrial/technology education. Prerequisite: consent of instructor.

190-530 Implementing Technology Education 3 Cr. Converts the theory of Contemporary Technology Education programs into instructional materials, facilities, and strategy suited to the secondary and post-secondary school. F-W-S

190-533 Shop Planning and Equipment Selection 2 Cr. School shop facility planning: equipment selection, placement, care and management. Prerequisite: 190-405, or equivalent.

190-575 Workshop: 1-3 Cr. Current specialized topics in industrial education through experiential activities. Prerequisite: consent of instructor.

190-606 Learning Activities Industrial/Vocational Education 2 Cr. A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and affective domains to carry out stated behavioral objectives. An evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects.

190-631 Field Trips to Industry 1-3 Cr. Opportunities are provided for industrial and vocational education majors as well as teachers to accumulate information about industries through local and distant on-site visits to industries. A third credit may be earned by showing evidence of application of data collected in courses being taught.

190-637 School Shop Organization and Management 2 Cr. Experience in administration, project development and teaching problems associated with industrial education. Prerequisite: 190-205. S

190-638 Course Construction 2 Cr. Directed experience in curriculum development and course of study construction for industrial education teachers; development of behavioral objectives and of instructional materials to help reach these objectives; development of course of study, instructional package and/or unit of instruction. W-S

195-300 Technology 3 Cr. Development, levels, types, processes, influences and control of technology; significance of

technology in students' lives and its effect on decision-making processes in technological society. F-S

195-500 Evolution of Technology 2 Cr. Contemporary technology: how things got to where they are, and where they might go from here. Relationships between mechanical and social inventions and technology's role in human and institutional behavior.

195-520 Technological Advances—Fast Forward I 2 Cr. Outlines industry's rapid advancements in high technology as utilized in the world today. Reference is made to a variety of applications of this technology now and in the future. F-S

195-521 Technological Advances—Fast Forward II 2 Cr. Current applications of technology in today's society. Discusses how technological advances have affected educators through simulation, society through technological changes such as storing information, television communication and other new technological advances. W-S

195-532 Futures of Technology 2 Cr. Concepts of future studies as applied to technology. Exploration of possible alternatives. Techniques and skills for the professional user and the citizen consumer. F

195-540 Future of Work 1 Cr. Future possibilities as to why people work, who works, the kind of work and in what conditions. Project probable work environments and results of current trends.

MARKETING AND DISTRIBUTIVE EDUCATION

196-201 Introduction to Distributive Education 3 Cr. The field of distributive education; historical development, role in vocational education, career opportunities, certification requirements, and current trends. F-S

196-202 Supervision of Distributive Education Clubs 3 Cr. Organization of a DECA chapter, the administration of activities, and the design of competitive events, including "Program of Work" development, school and model store organization, and integration of DECA into the curriculum. Prerequisite: 416-201. F

196-301 Methods in Distributive Education 4 Cr. Methods and materials of distributive education: projects, individualized instruction, programmed instruction, demonstration, instructional resource materials, and laboratory equipment. Prerequisite: 416-201. S

196-401 Distributive Education Curriculum 3 Cr. Developing distributive education curriculum for secondary and post-secondary programs. Prerequisite: 416-301. S

196-408 Student Teaching—Distributive Education 8 Cr. Directed teaching and community experiences in selected off-campus schools (quarter). Prerequisites: 416-201, 416-301, 416-401, 469-560. S

196-501 Simulation in Distributive Education—Model Stores 3 Cr. Designed to develop methods, techniques, questions, activities and resources that center around teaching distributive education via the project method or model store simulation. Prerequisite: 416-201. F

196-555 Marketing and Distributive Education Seminar 2-3 Cr. Designed to update marketing and distributive education undergraduates and graduates (teacher-coordinators) on work experience, new curriculum, student organization competencies, coordination techniques, special needs, and Distributive Education related projects. Will be used to inservice high school teacher-coordinators and VTAE marketing teachers.

INDUSTRIAL TRAINING

198-550 Introduction to Industrial Training 2 Cr. Philosophy, career opportunities, status of training programs, curriculum and program development, methods and evaluation, overview of facilities. F-W-S

198-560 Training Systems in Business and Industry 3 Cr. Types and purpose of training as related to business and industry. Training analysis, content, delivery systems, evaluation and justification for training. Designed for non-education majors. S

198-589 Training Internship 2-8 Cr. Opportunities for students to learn and practice training management and instructional techniques through activities and experiences in a training department. Objectives commensurate with student's background and field of training. Activities include designing and implementing training programs in student's major or minor field of study in either industry, business, military or government training programs. Prerequisites: 198-550 or 198-560, GPA 2.5 consent of specialization director F-W

199-501 Pre-Service Workshop for Vocational Educators 1 Cr. Introduction to the basic concepts of teaching courses in Wisconsin vtac schools.

VOCATIONAL EDUCATION

199-502 Principles of Vocational/Technical/Adult Education 2 Cr. Philosophy, organization and administration of vocational, technical and adult education, nationwide, in Wisconsin and on the local level. F-W-S

199-534 Task Analysis 2 Cr. Analysis techniques utilized in curriculum develop-

ment. Emphasis on task analyses and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising vocational curriculum or job training programs. F-S

199-537 Competency Based Education—Vocational/Industrial 2 Cr. Competencies for VTAE programs and courses. Development of CBE performance indicators in all domains, a CBE management system, and basis for CBE evaluation.

199-541 Computer Generated Curriculum—Decal 2 Cr. Introduction to DECAL (Digital Equipment Corporation Author Language) programming and its inter-relationship to curriculum. DECAL program writing and editing for lessons and quizzes. Use of related student report files.

199-546 Seminar 1-3 Cr. Current topics in vocational, technical and adult education with application for personnel in the field. Prerequisite: consent of instructor.

199-560 Cooperative Occupational Education Programs 2 Cr. Philosophy, organization, coordination and teaching techniques of cooperative education programs in the various vocational areas. Roles, responsibilities and duties of the cooperative teacher coordinator. Prerequisite: 469-502. F-W-S

199-580 Computer Aided Instruction-Vocational/Technical/Adult Education 2 Cr. Applications of the computer in managing vocational, technical and adult education classrooms and laboratories. Utilization of computers in course preparation, evaluation and methods of teaching. Use of existing software and the evaluation of it. Prerequisite: consent of instructor or computer literacy course.

199-590 Vocational Education: Economic Development Role 2 Cr. The role of the Wisconsin VTAE system in response to rapidly changing technology and the economic climate in Wisconsin.

199-605 Methods of Teaching Vocational Education 2 Cr. Competency-based and individualized approach to methods of teaching vocational education. F

199-611 Individualized Instruction in Practical Arts and Vocational Education 2 Cr. Individualizing instruction as an alternative to conventional methods, organization and evaluation of teaching; especially helpful to teachers in vocational education and practical arts.

199-638 Course Construction for Vocational Educators 2 Cr. Competency-based and individualized approach to principles of course construction for vocational educators. F

199-640 Instructional Evaluation in Vocational Education 2 Cr. Competency-based and individualized approach to instructional evaluation for vocational educators. F

199-674 Adult Education 2 Cr. Philosophy and history of adult education in the U.S. Techniques for teaching adults: psychological factors, methods, adult interests and characteristics.

HOME ECONOMICS

INTERDEPARTMENTAL

200-295 Career Exploration in Home Economics 1 Cr. Career expectations and developmental needs of individuals and organizations/institutions in home economics. F

200-325 Computer Applications in Home Economics 2 Cr. Microcomputer applications in home economics. Analysis of appropriate data bases. Evaluation of home economics software. Hardware selection criteria appropriate to home economics applications. Comparison of mainframe and microcomputer appropriate applications. Prediction of future applications. Repeatable for various subunits. Prerequisite: 300-101 or consent of instructor.

200-395 Issues in Home Economics 1-2 Cr. Home economics issues encountered in pursuit of improved quality of life.

200-449 Cooperative Education Program in Home Economics 3-6 Cr. Work and study in an approved business/industry position related to the student's major. Selection by application and interview. Prerequisite: consent of instructor or field experience. Repeatable for credit.

200-681 Problems in Home Economics 2 Cr. Course will deal with special problems in depth as initiated by an instructor or according to student needs and interests. This course should serve as a culminating educative experience for students in the various areas of home economics. Prerequisite: consent of instructor.

HUMAN DEVELOPMENT AND FAMILY LIVING

212-100 Introduction to Early Childhood Programs 1 Cr. History, types of programs and staff requirements in early childhood professions. F-W

212-101 Introduction to Child Development and Family Life 1 Cr. Fields of child development and family relationships as an intrinsic part of home economics; occupational opportunities in programs serving families and children. F-W

212-115 Introduction to Home Economics in Business 1 Cr. Introduction to Home Economics in Business with emphasis on history of field, professional development, and personal qualities needed in various positions. F-W-S

212-124 Child Development I 3 Cr. Developmental study of the child from conception through adolescence: physical, intellectual, social and emotional growth; observation required. F-W

212-163 Adult/Child Interaction 1-2 Cr. Organizing and sustaining positive functioning of children and adults in learning environment. F-W

212-168 Fostering Language Development in Young Children 3 Cr. Methods and techniques of fostering language development in young children. F-W

212-204 Teaching/Learning Strategies in Early Childhood 5 Cr. Program management, classroom arrangement, guidance principles, sensory stimulation, enhancement of self and creative expression with young children. Prerequisites: 212-124 and 212-264. F-W

212-235 Child Development Laboratory 1 Cr. Observation and/or participation in early childhood program. May be repeated for different experiences. Prerequisite: 212-124. Repeatable for credit. F-W

212-250 Individual and Family Relations 3 Cr. Dynamics of social-psychological forces affecting family interaction. Explorations of courtship, husband-wife, parent-child relationships. F-W

212-251 Early Years of Marriage 1 Cr. Presentation and evaluation of adjustments, goals and processes of the early years of marriage. F-W-S

212-264 Child Guidance 2 Cr. Principles of child guidance; evaluation of literature and application of studies to children; observation of young children. F-W

212-265 Child Guidance Practicum 1 Cr. Supervised participation in Child and Family Study Center or similar center: guidance techniques and understanding of children. Prerequisite: 212-264. F-W-S

212-303 Language Arts and Social Science—Early Childhood 2 Cr. Development of methods and techniques for teaching language arts and social studies to young children: effective social and communication skills and experiences. Prerequisite: 212-204. F-W

212-333 Science and Mathematics—Early Childhood Education 2 Cr. Directed study of application of skills for teaching mathematics and science concepts to young children: organization and presentation of teaching/learning experiences for children in early learning situations. Prerequisite: 212-204. F-W

212-342 Creative Activities for Young Children 3 Cr. Curriculum, methods and materials for music, art and creative movement activities for young children. Prerequisite: 212-124 or 212-264. F-W

212-350 Dynamics of Family Development 3 Cr. A study of the family with emphasis on environmental factors significant in marriage and family relationships. Prerequisite: 212-250. F-W

212-351 Death and the Family 1 Cr. Current literature concerning how families deal with the death of a member; how adults can help children cope with death in the family, how other family members deal with death of older and younger family members. F-W

212-352 Parenthood 1 Cr. Presentation and evaluation of current knowledge about parenthood; effects of parenthood on parents. F-W-S

212-380 The Family in Later Life 1 Cr. Overview of theory and research on older couples and families along with issues and problems facing late-life families. Prerequisite: 212-250 or consent of instructor. W

212-401 Issues in Child Development and Family Life 1 Cr. Issues related to profession in the areas of Child Development and Family Studies. Prerequisites: junior standing, in CDFL program. F

212-407 Parent Education/Involvement 2 Cr. Parent groups: training of leaders, survey of literature. Practicum with parent groups. Prerequisite: 212-264. F-W

212-408A Student Teaching in Preschool Programs 4 Cr. Directed teaching and community experience in selected early childhood centers. Prerequisite: 212-333. F-W

212-408B Student Teaching in Kindergarten 4 Cr. Directed teaching and community experience in selected kindergartens. Prerequisite: 212-303. F-W

212-409 Clinical Seminar in Preschool Programs .5 Cr. Seminar concurrent with student teaching in Child and Family Study Center or other preschool program. F-W

212-411 Clinical Seminar in Kindergarten Education .5 Cr. Seminar concurrent with student teaching in kindergarten. F-W

212-420 Theories of Early Childhood Education 2 Cr. Early childhood education: evolution, theories and principles of current programs, and development of individual philosophy. Prerequisite: 212-408A. F-W

212-433 Reading in Early Childhood Education 3 Cr. Current philosophies, methodology and materials for teaching reading: readiness activities and beginning reading in early childhood. Prerequisite: 212-333. F-W

212-451 Divorce 1 Cr. Evaluation of divorce and trends as part of American family system. Prerequisite: 212-250. W

212-524 Child Development II 3 Cr. Empirical study of physical, intellectual, social and emotional development of children. Prerequisites: 212-124 and 212-264. F-W

212-530 Adulthood and the Family 3 Cr. Study of adults in the family context during the early and middle years. Prerequisites: 212-124, 212-324. W

212-535 Seminar On Self-Growth 2 Cr. Theories of the self; exploration of aspects of self-development and actualization. Prerequisite: 212-350 or 212-524. F-W

212-541 Home-Based Programs in Early Childhood Education 1 Cr. Planning, supervising and implementing a home intervention program for young children and their families. S

212-545 Exceptional Needs and Programming—Early Childhood 2 Cr. Program development and implementation for preschool mentally handicapped children. Prerequisite: consent of department. F-W

212-553 Dual Career Families 1 Cr. The dual career marriage as a form of family life; benefits and problems encountered. F-W-S

212-554 The Single-Parent Family 1 Cr. Description, statistical trends and problems of single-parent families. F-W

212-570 Singlehood 1 Cr. Experiences of singles; singlehood as a phase in life cycle and as a life-style in contemporary society. Prerequisite: 212-250. F-W-S

212-580 Future of the Family 1 Cr. Experimental and utopian family forms; future of the family. W

212-581 Dynamics of Marital Interaction 2 Cr. Patterns of husband/wife power distribution, task differentiation, decision making, communication, role adaptation and marital satisfaction in family life cycle; theoretical analysis of marital behavior within the family as a social system. Prerequisite: consent of instructor.

212-590 Family Research and Methodology 3 Cr. Analysis of family theory, research methodology, and selected topics in family relations. Prerequisites: 212-250 and 212-350. W

212-595 Special Topics in Human Development 1-2 Cr. Special topics in human development. Prerequisite: junior standing. Repeatable for credit. S

212-598 American Study Tour in Child Development 2 Cr. Study tour of child development centers; discussions, lectures by leaders in field of child development. Prerequisite: consent of instructor. S

212-601 Child and Family Law 3 Cr. Legal issues affecting children and families. Prerequisites: 212-250, 212-350 and junior standing. W

212-607 Parent Counseling 2 Cr. Approaches and techniques for working with parents; observation and experience in childrearing problems parents face. Prerequisites: 212-124 and 212-264. W

212-610 Family Impact Seminar 3 Cr. Content, methods and process of assessing impact of public policy on children and families. Prerequisites: 212-250, 212-350, 375-510 or consent of instructor. W

212-615 Family Stress, Coping and Adaptation 1 Cr. Impact of family development and stress on individual and family well-being. Prerequisite: 212-250. S

212-624 Advanced Child Study 3 Cr. A study of principles and review of literature pertaining to children. Prerequisites: 212-124 and 212-264.

212-626 Special Topics in the Study of Family Life 1-3 Cr. Family life programs and literature; individual study of problems of personal or professional interest. Prerequisite: 212-350. Repeatable for credit. F-W-S

212-626A Special Topics in the Study of Family Life 1-3 Cr. Family life programs and literature; individual study of problems of personal or professional interest. Prerequisite: 212-350. Repeatable for credit. F-W-S

212-637 Seminar in Child Development 2 Cr. Special problems and aspects in child development; preference given to students' interests. Prerequisite: consent of instructor.

212-638 Child Abuse and Neglect 2 Cr. How child abuse and neglect affects the abused/neglected child and the abusing/neglecting family; ways of coping with family and social problems. Prerequisites: 212-124, 212-250 or consent of instructor. F

212-650 Introduction to Marriage and Family Therapy 3 Cr. Conceptual frameworks and approaches to marriage and family counseling. Prerequisite: consent of instructor. F

212-651 Marriage and Family Therapy Seminar 3 Cr. Application of basic counseling techniques in premarital, marital, family and couples-group counseling; supervised by professional marriage and family counselor. Prerequisite: 212-650 or consent of instructor. W

212-652 Fatherhood 1 Cr. Critical issues surrounding role of the father in today's society. Prerequisite: 212-124 or 212-250.

212-653 Relationship Communication Training 2 Cr. Communication theories and skills applied to marital, family and

other intimate relationships. Application of communication skills to personal relationships and professional work. (Preferably, but not necessarily, have your premarital or marital partner with you). Prerequisite: consent of instructor. F

212-654 The Workplace and the Family 2 Cr. Linkages between families and workplace; corresponding consequences for individual family well-being and the workplace. Prerequisites: 212-124 and 212-250 or consent of instructor. W

212-660 Current Topics in Sexuality 1 Cr. Overview and evaluation of current research concerning human sexual behavior and attitudes. Prerequisite: 212-250. F-W-S

212-664 Special Topics in Early Childhood Curriculum 1-3 Cr. Philosophy and methodology of early childhood education; problems confronting teachers. Prerequisite: 212-303. Repeatable for credit. S

212-665 Administration—Early Childhood Education Programs 2 Cr. A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating early childhood education programs. Field trips required. Prerequisite: 212-408B. F-S

212-666 Family Planning 1 Cr. Factors influencing family planning; knowledge and services for effective family planning practice. Prerequisite: one undergraduate course in family relations.

212-680 The Aging Person 2 Cr. Characteristics and needs of aged members of society; intergenerational relationships of family members. F-W

212-685 Seminar—The Culturally Distinct Child and Family 3 Cr. Study of ethnic, racial, cultural and economic influences on the child and family in the United States. Emphasis on improving human interactions. Prerequisite: 212-324 or 212-350. F-W

212-690 Death Education and Counseling in Families 2 Cr. Death and dying theory; research, practice and application in education and individual and family counseling. Prerequisite: 212-351 or consent of instructor.

212-693 Practicum in Child Development and Family Life 4-8 Cr. Practicum experiences in child development, family relationships and human resource management within a community agency, business or organization. Prerequisite: consent of instructor. F-W-S

CLOTHING AND TEXTILES

214-109 Applied Design for Family Living 2 Cr. Identification and application of design elements and principles to specific areas of home economics. F-W

214-110 Principles of Apparel Design 1 Cr. Elements and organization of design in contemporary apparel for men and women. F-W

214-120 Introduction to Apparel/Textiles/Merchandising 2 Cr. Careers in fashion merchandising, clothing and textile industries terminology; professional and personal development. F-W

214-140 Textiles 3 Cr. Selection, use and care of clothing and household fabrics; analysis of their components. Special course fee. F-W

214-202 Quality Analysis of Sewn Products 3 Cr. Factors that influence quality levels in manufactured apparel and other sewn products. Prerequisites: 214-110, 214-120, 214-140. F-W-S

214-225 Clothing and Textile Industry 3 Cr. Organization, promotion methods, and interrelationship of textile and clothing industries; consumer demand and diffusion of fashion. Prerequisite: 214-140. F-W

214-227 Basic Merchandising 3 Cr. Merchandising in department, specialty and discount stores; marketing strategies, operations, buying, trend merchandising, and fundamentals for apparel and hardlines. Prerequisite: 214-120. F-W

214-266 Apparel Construction 3 Cr. Construction theory and principles of fitting applied to garment construction. Recommended: 214-140. F-W

214-268 Outdoor Apparel and Equipment 2 Cr. Selection, construction, and maintenance of outdoor apparel and fabric equipment. F

214-274 Apparel Manufacturing 3 Cr. Production planning, quality control and analysis of apparel industry. Prerequisites: 214-266, consent of instructor. F-W

214-280 Flat Pattern 3 Cr. Develop paper patterns by varying a master pattern. Original garments are designed and constructed. Prerequisite: 214-266.

214-285 Design for Apparel Production 2 Cr. Development of working apparel sketches for interpretation by apparel production personnel. Prerequisites: 214-110, 304-101. F-W-S

214-326 Professional Mini Encounter .5 Cr. Observation of company operation and participation with specific executive personnel for a two-day period in field related to the student's program. Prerequisite: 214-398, or equivalent. F-W

214-327 Ready-To-Wear Merchandising 2 Cr. Techniques for maximizing volume and profit within predetermined market objectives, covering major ready-to-wear groupings. Special course fee. Prerequisites: 160-206, 214-120 and 214-225. F-W

214-329 Fashion Merchandising Promotion 3 Cr. Application of fashion merchandising promotion procedures: display, oral and written promotional communication, and publicity. Special course fee. Prerequisite: 214-227. F-W-S

214-330 Home Furnishings Merchandising 2 Cr. Home furnishings merchandised by primary types of retail outlets. Prerequisites: 214-225 and 214-227. F-W

214-366 Pattern Adjustment and Fit 2 Cr. Theory and techniques of selecting, measuring and adjusting patterns; application of fitting problems to individual figure. Prerequisite: 214-266 or consent of instructor. F-W

214-367 Pants—Adjustment and Fit 1 Cr. Theory and techniques of drafting and adjusting pants patterns; application of fitting problems to individual figure. Prerequisite: 214-366 or concurrent registration. W

214-368 Experimental Clothing 3 Cr. Application of problem-solving techniques in designing and constructing garments using client approach. (Students in this course will not receive credit for 214-466 or 214-566). Prerequisites: 214-110, 214-140 and 214-366. F

214-374 Apparel Manufacturing Laboratory 2 Cr. Practical application of concepts and procedures involved in the manufacture of marketable apparel products. Not available to students who have completed 214-272 Industrial Sewing. Prerequisite: 214-274.

214-375 Grading Apparel Patterns 2 Cr. Develop grading charts. Proportionately change patterns to produce size ranges for various figure types. Prerequisite: 214-266. F-W

214-398 Fashion Merchandising Field Experience 2 Cr. Off-campus work and study in approved position to better understand challenges and potentials of various careers in merchandising and clothing and textile industries. Prerequisite: 214-120. F-W-S

214-400 Self-Presentation in Business 1 Cr. Learn and practice skills of self-presentation in business and professional world. F-W

214-402 Undergraduate Clothing and Textile Research 2 Cr. Individual investigation of a specific clothing and textiles interest; correlate clothing and textiles with related fields. F-W

214-426 Fashion Merchandising Practicum 3 Cr. Observation and structured experience in merchandising procedures dealing with complete operations and management of retail establishment. Prerequisites: 214-227, 214-329 or consent of instructor. F-W-S

214-430 Merchandise Planning and Control 3 Cr. Techniques of merchandising fashion departments: budgeting, assortment planning, managing inventory; buying for resale. Prerequisites: 160-206, 214-227 and any math. F-W-S

214-492 Practicum in Textile Printing 2 Cr. Use of textile design techniques: silk screen, tie dye, printing and batik; emphasis on good design and creativity. Special course fee. Prerequisite: 304-101. F-W

214-515 Clothing for Special Needs 2 Cr. Methods by which the disabled, handicapped, elderly, and other people with special needs may have their clothing needs met. F-W

214-519 International Economic Trends in Textiles/Clothing 2 Cr. Economic importance of the textile and apparel industries in the U.S.A. and the world. Special course fee. Prerequisites: 214-140 and 320-210. F-W

214-525 Men's and Boys' Merchandising 1 Cr. Specialized techniques of merchandising men's wear and boys' wear: stock planning, market trends and controls. Prerequisite: 214-327. F-W

214-527 Store Management 3 Cr. Develop management skills for retail stores of varying size. Prerequisites: 214-430 or consent of instructor, senior or graduate standing. F-W

214-529 Fashion Merchandising Internship 8 Cr. Work in prearranged job (advanced position similar to trainee job) provides special opportunity in fashion retailing. Prerequisites: 214-298, 90 credits completed, 3.0 GPA, and Fashion Merchandising major. F-W-S

214-529A Fashion Merchandising Internship 6 Cr. Work in prearranged job (advanced position similar to trainee job) provides special opportunity in fashion retailing. Prerequisites: 214-298, 90 credits completed, 3.0 GPA, and Fashion Merchandising major. S

214-535 Special Topics in Fashion Merchandising 1-2 Cr. Special topics in fashion merchandising. Repeatable for different topics. Prerequisites: junior standing, completion of basic courses within the area or consent of instructor. Repeatable for credit.

214-541 Fabric Maintenance 2 Cr. Products and methods used in cleaning textile products; compare home and commercial laundry methods and dry cleaning procedures and their effects on textile products. Prerequisite: 214-140. F

214-545 Textiles for Interiors 2 Cr. Raw materials, fabric structures, specifications, and legislation related to quality, performance, and maintenance of textiles for commercial and household uses. F

214-550 Textile Evaluation 3 Cr. Problems in fiber identification, fabric performance, and care; chemical and microscopic testing procedures; methods for gathering and interpreting data; individual problems. Prerequisite: 214-140. F-W

214-555 Special Topics in Textiles and Clothing 1-2 Cr. Special topics in clothing and textiles. Repeatable for different topics. Prerequisite: junior standing. Repeatable for credit.

214-568 Engineered Tailoring 2 Cr. Industrial production methods applied to construction of tailored garments. Prerequisites: 214-266, 214-272. F

214-581 Functional Clothing Design 3 Cr. Application of physical science theory to problems in clothing design: impact protection and thermal balance of the human body, structural properties of materials, and apparel forms. Prerequisites: 214-368, 214-550, 214-580. F

214-590 Practicum in Textile Design 3 Cr. Use of textile design techniques as means of artistic expression: stitchery, weaving, knotting, applique, and hooking; emphasis on good design and creativity. Prerequisite: 304-101. F-W

214-591 Natural Dyeing and Hand Spinning 2 Cr. Gather dyes from local environment, select mordants, dye fibers; spin dyed fibers on spinning wheels/drop spindles; historic dimensions. S

214-593 Design Problems in Textile Printing 3 Cr. Advanced textile printing practicum with specific concern for design problems. Special course fee. Prerequisite: 214-492 or consent of instructor.

214-594 Knit Design and Technology 2 Cr. Basic stitch formation and patterning of warp and filling knits. Influences on aesthetics and performance of knit fabrics. Production of knitted garments on a flat-bed knitting machine. Prerequisite: 214-140. F-W-S

214-595 Special Topics in Textile Design 1-2 Cr. Special topics in textile design. Repeatable for different topics. Prerequisite: junior standing. Repeatable for credit.

214-605 International Study Tour to the Fashion Industries 3-6 Cr. Tour of international centers of clothing, textiles, and related arts. Study of the cultural patterns. Program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries. S

214-610 History of Costume—Ancient to European 3 Cr. Development of costume throughout the ages: fashion as it reflects past cultures and influences present day costume. F

214-611 History of American Costume 3 Cr. Evolution of American costume from colonial times to present; costume characteristics and social, political, religious and cultural influences. W

214-617 Social/Psychological Aspects of Clothing 3 Cr. Social and psychological influence of dress on individual and group behavior patterns. F-W

214-625 Mass Merchandising 3 Cr. History, planning, design and techniques of mass merchandising in shopping centers, discount stores, and franchised and leased operations. Prerequisite: 214-227. F-W

214-639 National Study Tour to Fashion Industry 1 Cr. Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market. Prerequisites: consent of instructor and junior, senior or graduate standing. W

214-645 United States Textile Study Tour 2 Cr. Tour of textile industries in the U.S.: professional visits, lectures and discussions by consultants in textile field. Prerequisite: graduate standing or upper division. S

214-650 Textile Science 3 Cr. Structural aspects of textile fibers, yarns, and fabrics: modification of fibers; fiber and fabric analysis. Prerequisite: 214-140. F

214-655 Recent Developments in Clothing and Textiles 2 Cr. Apparel and textiles explored in light of new developments in these and related fields. Prerequisites: 214-140, 214-266 or consent of instructor.

214-666 Tailoring 3 Cr. Construction of suits and coats using custom tailoring techniques. Prerequisite: 214-266. W

214-670 Theatrical Costuming 3 Cr. Problems in costuming theatrical productions; plan, design and construct costumes for major theater production, as coordinated by director of production. Prerequisite: 214-266 or consent of instructor.

214-680 Draping 3 Cr. Application of draping principles in design and construction of garments; emphasis on creativity. Prerequisite: 214-266. F-W

214-681 Apparel Design—Draping 1 Cr. Advanced techniques of draping in apparel design; emphasis on individuality and fabrics of interesting texture and design. Prerequisite: 214-680.

214-682 Apparel Design—Flat Pattern 1 Cr. Interpretation of original designs using pattern drafting and advanced flat pattern methods. Prerequisite: 214-580.

214-685 Apparel Design Studio 2 Cr. Analysis of designer responsibilities. Creation and development of original designs using flat pattern and/or draping techniques. Preparation of a professional

portfolio. Prerequisites: 214-581, 214-680, 304-534. W

214-690 Advanced Textile Design—Stitchery 1 Cr. Creative exploration of textile design: stitchery and applique. Prerequisite: 214-590. W-SO

214-691 Advanced Textile Design—Non-Loom 1 Cr. Creative potentials of specific areas in textile design: non-loom interlacing thread techniques (sprang, macrame, netting, knitting, crocheting). Prerequisite: 214-590. W-SE

214-692 Advanced Textile Design—Hooking 1 Cr. Creative potentials of specific areas in textile design: hooking and rya. Prerequisite: 214-590. W

214-693 Structural Design and Weaving 2 Cr. Experiences in loom weaving including two and four harness techniques. Special course fee. Prerequisite: 304-101 or consent of instructor. F-W-S

214-694 Advanced Weaving Studio 2 Cr. Complex hand-weaving techniques: block theory, pile constructions, leno techniques and double cloth. Individual work encouraged. Special course fee. Prerequisite: 214-693, or equivalent. F-W-S

214-695 Historic and Contemporary Fabrics 3 Cr. Analysis of designs and techniques of decorating historic and contemporary fabrics; contribution of decorative fabrics to enrichment of human experience. W

FOOD SCIENCE AND NUTRITION

229-101 Dietetics As a Profession 1 Cr. Survey of types of dietetic and foodservice administration programs in the United States; role and function of staff; professional literature. F

229-124 Foods 4 Cr. Scientific principles and application in the selection, preparation and service of food. F-W

229-136 Food for Young Children 2 Cr. Food needs of infants and young children. For early childhood education majors; not applicable for students with credit in 229-212. F-W

229-202 Fundamentals of Nutrition 2 Cr. Basic principles of applied nutrition; not applicable for students in Home Economics Education, Dietetics, Home Economics in Business, Food and Nutrition, nor those with credit in 229-212. F-W

229-205 Nutrition for Weight Control 2 Cr. Principles of nutrition related to physical stamina, mental alertness and emotional stability of people undergoing weight modification. F-W

229-212 Nutrition 3 Cr. Principles of human nutrition and application to selec-

tion of food for family group members. F-W

229-220 Outdoor Cooking 1 Cr. Food preparation principles in cooking and serving outdoors; equipment for outdoor food preparation; foods for camping, backpacking and canoe camping; preparing wild game and gathering and preparing wild foods. F-W-S

229-225 Special Topics in Food and Nutrition 1-2 Cr. Study of special topics in Food and Nutrition. Prerequisite: consent of instructor. Repeatable for credit. S

229-240 Food Science 4 Cr. Physical and chemical changes affecting selection, preparation and service of food. Prerequisite: 311-201. F-W

229-260 Menu Planning and Design 2 Cr. Principles of menu planning, design and production for commercial and institutional food establishments.

229-300 Creative Table Appointments 1 Cr. Principles of design in selection of table appointments for creative entertaining. Not applicable for students with credit in 229-308. Prerequisite: 304-101.

229-305 Baking Processes 1 Cr. Art and science of baking: home and industrial methods. May be repeated for different subunits. Repeatable for credit.

229-308 Meal Management 3 Cr. Development and application of management principles to decision making in meal production. Time, energy and cost considerations in providing meals of optimum aesthetic and nutritional value. Special course fee. Prerequisites: 229-124 or 229-240 and 229-212. F-W-S

229-397C Field Experience (Seminar) 1-2 Cr. Field experience related to the dietetic, food industry, foodservice administration or food and/or nutrition education areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for 2 credit option.

229-397E Field Experience (Experience) 1-2 Cr. Field experience related to the dietetic, food industry, foodservice administration or food and/or nutrition education areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for 2 credit option.

229-404 Foodservice Management for Child Care Centers 2 Cr. Principles of foodservice administration for preschool children in centers: individual needs and emotional reactions to food, meal planning, purchasing, receiving and storage, principles of food preparation and service, and equipment. W

229-405 Foodservice Practicum for Child Care Centers 1 Cr. Application of food

management principles for directors of child care centers: personnel management, menu planning; recipe selection, standardization and adjustment; food purchasing and storage, food production and service, equipment use, sanitation and safety, and nutrition education in day-care setting. Prerequisite: 229-404. F-W

229-410 Advanced Nutrition 3 Cr. Principles of human nutrition applied to individual, family, community and world problems. Prerequisites: 229-212 and 311-511. F-W

229-446 Food Preservation 1 Cr. Principles and practical application of methods of food preservation and storage. F-W-S

229-505 Nutrition for the Aged 2 Cr. Nutrient requirements and food consumption patterns of the elderly; food services for aging Americans. Prerequisite: 229-212 or consent of instructor. W

229-512 Clinical Experience in Elderly Nutrition Programs 1 Cr. Practical experience in basic foodservice operation and nutrition education activities in an elderly nutrition program. Prerequisites: 229-410 and 229-505, 229-606 recommended. F-W-S

229-525 Special Topics in Food and Nutrition 1-2 Cr. Study of special topics in Food and Nutrition. Prerequisites: consent of instructor and for 500 level, completion of basic courses in the area. Repeatable for credit. S

229-550 Fast Food Operations 3 Cr. Organization and function of fast foodservice operations. Work methods procedures, staffing, food quality and quantity control, space and equipment maintenance, safety, sanitation, merchandising and career options will be covered. Prerequisites: 229-124 or 229-240, 229-308 and 245-311. F-W

229-606 Nutrition Education 3 Cr. Nutrition education as planned behavioral change: problems and solutions in instructing various populations; identification, development and evaluation of nutrition resources. Prerequisites: 229-212 and 242-201. F-W

229-612 Clinical Experience—Community Nutrition Programs 1 Cr. Practical experience with community nutrition program; basic nutrition program or foodservice operation and nutrition education activity. Recommended: 229-618 and 229-630. Prerequisites: 229-308 or 229-318, 229-410, 229-606 and 229-680. F-W

229-618 Diet Therapy 4 Cr. Principles and methods for use of diet as therapy in certain pathological conditions. Prerequisite: 229-410 completed at C level or above. F-W

229-620 Food Styling 1-3 Cr. Food as media for artistic expression; effective use of

color, form and texture. Prerequisites: 229-124 or 229-249 and senior or graduate standing or consent of instructor. Repeatable for credit. F-W-SE

229-630 Food Behavior 3 Cr. Food behavior: how it controls eating problems, resultant nutritional status; formation of food patterns to meet physical, physiological, psychological or social needs; modification of food behavior. Recommended: courses in social and behavioral sciences. Prerequisite: senior or graduate standing and 229-212 (preferably within past two years). F

229-631 Readings in Food Science and Nutrition 2 Cr. Critical reading, evaluating, and reporting from pertinent current journals and other publications. Repeatable for credit.

229-633 Maternal and Child Nutrition 3 Cr. Application of principles to maternal, infant, child and adolescent nutrition. Prerequisites: 229-212 and 308-132. F-W

229-638 Experimental Foods 3 Cr. Experimentation with selected food materials, techniques and equipment; directed study in individually chosen area. Prerequisites: 229-124 or 229-240 and 311-201. F-W

229-642 Advanced Foods 2 Cr. Comparative studies of food selection and preparation; appraisal of foods. Prerequisite: 229-124 or 229-240. F-W

229-650 Food Processing 3 Cr. Industrial methods used to prepare and preserve food. Prerequisites: 229-124 or 229-240, 355-120. W

229-661 Social and Cultural Aspects of Food 2 Cr. Social, economic, and cultural influence on human food patterns. Prerequisites: 229-124 or 229-240 and senior or graduate standing or consent of instructor. F-W-SO

229-665 International Food Study Tour 3-6 Cr. Specific international setting tour to study culture, food patterns and industry. Repeatable for credit. SE

229-680 Community Nutrition 3 Cr. Current status and legislative regulation of community nutrition programs; assessment of community needs and resources; program planning, funding and evaluation; role of community nutritionist/home economist as program planner. Recommended: courses in social and behavioral sciences. Prerequisite: senior or graduate standing and 229-212 or equivalent (preferably within last two years). W

HOME ECONOMICS EDUCATION

242-101 Experiential Learning in Home Economics 1 Cr. Contribution of home economics education to development of individuals and families; responsibilities

of a professionally trained home economist. F

242-201 Teaching Techniques in Home Economics 2 Cr. Study of teaching techniques and skills for home economics learning experiences in relation to classroom organization and objectives. F-W

242-240 Clinical Experience in Microteaching 1 Cr. Microlessons with microclasses will be videotaped and reviewed for self-evaluation and critique with instructor. F-W

242-241 Clinical Experiences in the Community 1 Cr. Plan and implement home economics learning experiences for children and adults in community programs. Repeatable for credit. F-W

242-301 Home Economics Curriculum 3 Cr. Development of curriculum to meet needs of students in home economics programs. Prerequisite: Junior or senior standing. F-W

242-341 Clinical Experiences in Schools 1 Cr. Supervised experience in classroom teaching for development of motor, perceptual, social and cognitive learning through home economics substantive areas. Recommended: 242-240. Prerequisite: junior standing. F-W

242-397C Field Experience - Home Economics 2 Cr. Field experience related to Home Economics skills and knowledge used in teaching Home Economics Wage Earning Courses at secondary level. F-W-S

242-397E Field Experience - Home Economics 2 Cr. Field experience related to Home Economics skills and knowledge used in teaching Home Economics Wage Earning Courses at secondary level. F-W-S

242-443 Clinical Seminar in Home Economics Education 2 Cr. Preparation for and evaluation of student teaching experience; analysis of classroom situation and evaluation of teaching process. Concurrent enrollment in 242-444 required. Recommended: 242-301. F-W

242-444 Practicum in Teaching Home Economics 6 Cr. Experience in applying teaching and learning theory: self-evaluation and analysis of teaching/learning situation under guidance of master teacher. Concurrent enrollment in 242-443 required. Recommended: 242-301. F-W

242-488 Internship Teaching 8 Cr. Alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one semester. Prerequisite: 242-301. F-W

242-500 Externship—Home Economics Community Education 4-8 Cr. Practicum in one or more of following home eco-

nomics education programs: extension services, elementary education, post-secondary education, occupational teaching experience and community educational services. Approval of graduate program director required if taken for graduate credit. Prerequisite: consent of department. F-W

242-503 Home Economics in the Middle and Elementary School 3 Cr. Develop techniques, materials and curriculum concepts in home economics with application of human growth and development principles for teaching in middle and elementary school. W

242-505 Home Economics Elementary School Practicum 2 Cr. Teaching experience at the elementary school level under the guidance of a cooperating teacher and university supervisor. Prerequisite: 242-503. W

242-544 Future Homemakers of America Workshop 1 Cr. Integration of Future Homemakers of America and the Home Economics Related Occupations student organizations into the home economics classrooms and programs. Prerequisite: junior standing.

242-620 Vocational Programs in Home Economics 2 Cr. Techniques, materials and curriculum for home economics wage-earning programs in secondary and post-secondary schools; preliminary procedures for program development. Prerequisites: 199-502 and 242-301. F-W

242-623 Education for Consumer Homemaking 2 Cr. Curriculum development; evaluation of methods and materials for teaching consumer education at secondary level. Prerequisite: 242-301. S

242-630 Concepts of Extension Education 2 Cr. Concepts and processes in conducting educational programs for adults and youth: philosophy, objectives and organization of extension education; leadership, development, program development, teaching methods and evaluation. Prerequisite: senior or graduate standing in Home Economics or Home Economics Education. W

242-651 Family Life Education Programs 2 Cr. Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. Prerequisites: senior standing, consent of instructor. F-W

HABITATIONAL RESOURCES

245-X98 Hotel and Restaurant Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. Prerequisite: 245-100. F-W-S

245-100 The Role of Management in Hospitality Industry 2 Cr. Prospective managers define and analyze nature of work, people, change and education and their interrelationships within hospitality industry. F-W

245-201 Hospitality Housekeeping Management 2 Cr. Management principles applied to duties and responsibilities of housekeepers in hotels, motels, institutions and other hospitality enterprises. F-W

245-202 Front Office Management 3 Cr. Principles required to organize, operate and manage hotel or motel front office; guest needs, salesmanship and procedures for different types of front office operations. F-W-S

245-205 Hospitality Organization Management 3 Cr. Management principles for hotels and restaurants, supervisory development and training, labor relations, union contracts, ownership and financial structure and managerial interpretation and evaluation of current systems and procedures. Prerequisite: 245-100. F-W

245-222 Institutional Food Purchasing 2 Cr. Methods of large-quantity food purchasing: determining standards, specific needs and industrial offerings; formulating specifications, buying procedures and controls. Prerequisite: 229-124. F-W

245-240 Introduction to Tourism and the Travel Industry 2 Cr. Principles and current knowledge of domestic and international tourism; benefits to community, area, state and nation; trends and potentials. Prerequisite: 320-210. F-W-S

245-250 Family Housing 3 Cr. Relationship of space, equipment, aesthetics and culture to human habitat. F-W

245-275 Management of Family Resources 3 Cr. Application of basic management concepts to family economics. F-W

245-301 Bar Management 2 Cr. History, format and management of bar operations. F-W

245-311 Quantity Food Production 3 Cr. Quantity food production concepts; menu planning, recipe development, work production schedules, production analysis, food and labor cost controls, and introduction to productivity and work simplification concepts; lab work in food production and service. Prerequisite: 229-124. F-W-S

245-312 Restaurant Operational Management 3 Cr. Service of special functions, banquets, receptions: planning, preparation service, menu planning, cost controls, classical buffet setups and personnel organization. Prerequisites: 229-124 and 245-311. F-W-S

245-340 Development of Tourism Attractions 3 Cr. Diversified natural and man-made background tourism elements (BTE): preservation and incorporation of concepts for development of tourism destinations. Prerequisites: 245-240 and 320-210. F-W-S

245-341 Tourism Goods and Services 3 Cr. Total and component parts of tourism goods and services; present and future patterns of supply and demand. Prerequisites: 245-240 and 320-201. F-W

245-344 Hospitality Marketing and Sales 3 Cr. Analysis of theories, fundamental principles and techniques of hospitality marketing and convention sales; functions, interrelationships and coordination of all hospitality departments and their roles in assuring success of marketing effort. F-W-S

245-350 Psycho-Socio Aspects of Housing 2 Cr. Analysis of socio-psychological factors associated with housing. Biological, psychological, and sociological human needs are used to evaluate residents' satisfaction of their housing environment. Possible responses to residential dissatisfaction are identified and evaluated. Prerequisites: 245-250 and 387-110 or 479-110, Or instructor's permission.

245-355 Energy and Household Equipment 3 Cr. Physical principles and fuels involved in household appliance operation; selection, operation, use and care of small, portable appliances. F

245-360 Consumer Economics 3 Cr. Motives for consumption, family income and expenditures, selection of commodities and services, buying and selling practices; evaluate consumer aids, investigate local situations. Prerequisite: 320-201. F-W

245-370 Hotel and Restaurant Accounting 3 Cr. Design and interpretation of specialized accounting and financial control systems in management decision making; uniform system of accounts, departmentalized costing procedures, statement analysis and interpretation. Prerequisite: 160-206. F-W

245-371 Food, Beverage and Labor Cost Controls 3 Cr. The use of financial techniques and systems to control food, beverage and labor costs in hospitality food service operations. F-W-S

245-414 Haute Cuisine 3 Cr. Study and preparation of classic food items and service, culminating in service of formal banquet. Prerequisites: 245-312 and senior standing with a 2.5 GPA. W

245-436 Commercial and Residential Lighting 2 Cr. Practical information on light for general residential living; sociological, psychological and physical aspects of lighting environment. F

245-455 Kitchen Planning 2 Cr. Arrangement of work centers, equipment, storage and activities for maximum efficiency in residential kitchen design. Prerequisite: 245-250 or consent of instructor. F-S

245-482 Seminar in Hotel and Restaurant Management 3 Cr. An advanced course in management. The student will select and research a current topic of importance to the industry. Prerequisites: 245-140 and 245-300. Repeatable for credit.

245-495 Hotel and Restaurant Internship 6-8 Cr. Prearranged advanced positions similar to management training programs in hospitality management. (Available for 8 semester credits and 6 summer credits. Summer internships 12 weeks minimum). Prerequisite: Ninety credits with 3.25 GPA, Hotel and Restaurant major, and Internship Committee approval. F-W-S

245-501 Foodservice Administration 3 Cr. Organization and administration of institutional foodservice systems, personnel selection and training, cost control and problems of supervision. Prerequisite: 229-318. F-W

245-513 Quantity Food Production and Service 3 Cr. Application of food preparation principles to large-quantity production; menu and formula standardization, food production costs and menu planning for institutions. Prerequisite: 245-312 or 245-501. F-W-S

245-515 Lodging Administration 3 Cr. Analysis of theories, principles and techniques of lodging management; problems and issues encountered by management in providing quality service within cost-efficient organization. Prerequisites: 245-201 and 245-202. F-S

245-521 Foodservice Equipment 2 Cr. Factors affecting design, selection, physical facilities and utilities involved in foodservice equipment. Prerequisite: 130-110. F-W-S

245-531 Ecology of Habitat 2 Cr. Philosophical and physical aspects of human housing, with international perspective; insight into family housing needs through lab work; role of home economist in solution of world housing problems. Prerequisite: six credits of housing, equipment or equivalent. F

245-565 Consumer Aspects of Life Insurance 1 Cr. Comparative methods of determining life insurance needs; evaluation of adequacy of policy and program features; relevance to family financial planning. Prerequisite: 245-275 or consent of instructor. F

245-566 Consumer Aspects of Health Insurance 1 Cr. Types and sources of health insurance available to U.S. consumer; analysis of American health-care crisis

and proposed solutions. Prerequisite: 245-275 or consent of instructor. F

245-600 Integrated Management Systems—Hospitality 2 Cr. Exploration, comparison and synthesis of practices, concepts and theories in hospitality management systems. Prerequisite: 245-205. F-W-S

245-625 Hospitality Industry Law and Liability 3 Cr. Laws applicable to ownership and operation of inns, hotels, motels, restaurants and other places of public hospitality. Prerequisite: 160-318. F-W

245-626 Hospitality Industry—Employee and Labor Relations 2 Cr. Investigation of employee and labor relations in the hospitality industry; history, legality and techniques of dealing with unionization. F-W

245-640 Psychosocial Dimensions of Tourism 3 Cr. Various psychosocial dimensions of tourism: motivation, development, community and conflict as related to consumer-tourists, tourists and residents. W

245-645 Geography of Tourism 3 Cr. Locational analysis of land use and human migration in national and international tourism. Prerequisites: 245-240, 245-340 or consent of instructor. F-W

245-650 Human Habitat 3 Cr. Influence of different socio-economic factors on effective use of family housing resources; adjustment and flexibility of safety, comfort, convenience, physical and financial maintenance based on family cycle. Field trips and individual projects. F

245-655 Major Kitchen Appliances 3 Cr. Detailed structure and performance analysis of ranges, refrigerators, freezers, disposers, dishwashers, microwave ovens and selected kitchen appliances. Prerequisite: 245-355, or equivalent. S

245-656 Microwave Oven 2 Cr. Application of microwave heating principles to food preparation and service. F-W-S

245-657 Foodservice Microwave Oven 2 Cr. Microwave heating principles using commercial microwave ovens in foodservice. Prerequisite: 229-124 or 229-240. F-W-S

245-658 Experimental Laundry Procedures 2 Cr. Application of current knowledge for effective household fabric laundering; equipment use in laundry process, laundry aids and water composition; experimental lab work.

245-660 Consumer Credit 1 Cr. Types and sources of credit, determination of credit costs, considerations before using, and regulatory laws. Prerequisite: 245-360 or consent of instructor. S

245-662 Consumer Protection 1 Cr. Major federal and state consumer protection

agencies; major business, industry and private organizations set up to aid consumers; avenues of individual and collective consumer redress. Prerequisite: 245-360 or consent of instructor. W

245-663 Consumer Law 1 Cr. Major federal and state consumer protection laws, difficulties in obtaining passage and implementation, and pending federal and state consumer protection legislation. Prerequisite: 245-360 or consent of instructor. F-W

245-670 Hospitality—Financial Analysis/Budget/Forecasting 3 Cr. Application of accounting and financial analysis techniques to managerial decision-making in

hospitality industry. Prerequisites: 160-206, 245-370 and 245-371. F-W-S

245-676 Family Finance 2 Cr. Financial decisions and judgments that average individuals and families must make during a lifetime; income and occupation, family expenditures, credit, savings, taxes and estate plans. Prerequisite: 320-201. F-W

245-677 Financial Planning for Retirement 2 Cr. Financial considerations made in preparing for and during retirement. Emphasis on the values, goals, income, expenditures, credit, savings, investments, taxes and estate plans. Prerequisite: Senior standing F-W-S

245-681 Special Problems in Habitational Resources 2 Cr. Current problems in habitational resources; seminar topic chosen by instructor, individual or group. Repeatable for credit. F-W-S

245-682 Hospitality and the Handicapped Traveler 1 Cr. Provide increased sensitivity to needs of handicapped traveler; problems and possible solutions for hospitality organizations. F-W

245-685 Demonstration Techniques 2 Cr. Application of demonstration principles in planning and presenting all types of home economics demonstrations. F-W



LIBERAL STUDIES

INTERDEPARTMENTAL

300-101 Computer Literacy 2 Cr. Brief interdisciplinary introduction to computers, including the areas of hardware, software, history, programming logic and language, different types of systems and applications of computers in various areas. A student who takes Computer Applications in Business (354-142) cannot also get credit in Computer Literacy. F-W

300-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisites: consent of instructor and department chair.

300-250 Soviet Seminar Tour 2 Cr. Introduction to Russian civilization and contemporary Soviet society and government: tours of schools, museums, churches and historical sites; seminars with Soviet students and community leaders. W

300-255 Creative Problem Solving 2 Cr. Transdisciplinary problem solving through acquaintance with and practice in the use of a systematic approach to real problems.

300-260 The China Seminar 2 Cr. Introduction to Chinese civilization, contemporary society, and government including tours within China of schools, museums, communes, factories and historical sites. F

300-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisites: consent of instructor and department chair.

300-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisites: consent of instructor and department chair.

300-510 Introduction to Women's Studies 2 Cr. An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future. F-W

300-511 Topic in Women's Studies 1-3 Cr. Exploring, from interdisciplinary perspective, new information and ideas in a selected area of significance to women's studies. Prerequisite: 300-510 or consent of instructor.

300-575 The Ascent of Man 2 Cr. Exploring the nature and intellectual, philosophical and technical growth of humankind using "The Ascent of Man" TV series as basis for thought and discussion. Prerequisite: junior standing or consent of instructor. W

ANTHROPOLOGY

303-220 Introduction to Cultural Anthropology 3 Cr. Introduction to concepts and methods; variability of culture; outline of cultural elements; processes of cultural change. F-W

303-250 Man and His Past 3 Cr. Introduction to biological anthropology: man as primate, man's genetic makeup, stages of human evolution, relation of biology to culture, concepts of race, and man and his present environment. W

303-300 Native Americans 3 Cr. North American Indians: native American cultures prior to European contact, Indian/European historical relationships and contemporary reservation/urban Indian life and issues. F

303-610 The Anthropological Study of Family Systems 3 Cr. Anthropological, cross-cultural view of family systems, with attention to their organization, functions, dynamics and articulation with other institutions. Prerequisite: 303-220 or consent of instructor. W

ART

304-100 Drawing I 3 Cr. Concentration on the development of visual sensitivity through drawing with various media. F-W

304-101 Fundamentals of Design 3 Cr. Basic two- and three-dimensional design using various media for development of visual sensitivity. F-W

304-145 The Practice of Art 2 Cr. Introduction to creative concepts, techniques of presentation, practices in studio art, function of criticism, portfolio ingredients and opportunities in the art world. S

304-202 Introduction to Art 3 Cr. Art appreciation and historical survey for the non-Art major. F

304-204 Interior Design 3 Cr. Design and development of interior spaces with a sensitivity to human interaction, materials, and furnishing. Prerequisite: 304-101. F-W

304-205 Problems in Interior Design 2 Cr. Advanced design problems for residential interior spaces with a sensitivity to human

interaction, materials, and furnishings. Prerequisite: 304-204. Repeatable for credit. F-W

304-210 Letter Form Design 3 Cr. Design of letterforms, figures, and visual symbols; history and development of type; calligraphy; page composition for various formats and audiences. Prerequisites: 304-100, 304-101. F

304-300 Design Theory and Methods 3 Cr. A study and application of various techniques and theories of design to fundamental design problems. Prerequisite: 170-205 or 304-101. F-W

304-305 Presentation Techniques 3 Cr. Experience in the various techniques of visually developing and presenting a design. F-W

304-310 Graphic Design I 3 Cr. Study and creation of visual images used to inform and/or persuade specific audiences. Prerequisite: 304-101. F-W

304-314 Interior Design Procedures and Specifications 2 Cr. Professional procedures and specifications for interior design proposals; quality control, material performance, public standards and use of related forms. Prerequisite: 304-204. S

304-315 Environmental Interior Design I 3 Cr. Analysis and application of various office systems as they apply to and are a part of an architectural setting. Prerequisite: 304-204.

304-316 Environmental Interior Design II 3 Cr. Analysis and application of various systems in an architectural setting for use in the design of public spaces, such as banks, malls, restaurants, hotels, etc. Prerequisite: 304-204.

304-319 Evolution of Design 3 Cr. Examination of basic concepts which influence the evolution of architecture, art and design. S

304-320 Interior Furniture Design 3 Cr. Applied studio projects with structural, material, economic and aesthetic considerations in the design of contemporary furniture. F-W

304-330 Industrial Design I 3 Cr. First course in the industrial design sequence providing an overview of design skills in their application to the resolution of product design problems. Prerequisites: 304-300 and 304-305 or 170-205. F-W

304-335 Product Form Design 3 Cr. Exploration of product forms through drawing and model-building techniques. Prerequisites: 304-300, 304-305, 304-330, 170-102, 170-103. F-W-S

304-340 Industrial Design II 3 Cr. Increased understanding of design as applied to the resolution of complex product design. Prerequisite: 304-330. F-W

304-360 Graphic Design II 3 Cr. Application of social, business and ethical factors affecting visual communication, while increasing sensitivity and experience in graphic design. Prerequisite: 304-310. F-W

304-380 Signage and Exhibition Design 3 Cr. Organization and design of environmental graphics through the production of signage, display, and exhibition support systems. Prerequisite: 304-360. S

304-405 Advanced Presentation Techniques for Designers 3 Cr. Techniques and skills for presentation and communication of visual materials; advanced perspective, mixed-media rendering, transparent watercolor rendering, gouache rendering applied to presentation of product's interiors and exteriors. Prerequisite: 304-305. F-W

304-410 Product and Packaging Graphics 3 Cr. Design and application of graphics to products, packages, and related display systems. Prerequisites: 304-360, (or 304-310 with instructor consent).

304-430 Industrial Design III 4 Cr. Advanced design problems chosen by consultation between student and instructor. Prerequisites: 304-330 and 304-340. F-W

304-431 Symposium in Interior Design 2 Cr. Exposure to and discussion of the practical working world of the interior designer. Prerequisite: Concurrent enrollment in 304-301. F-W

304-432 Industrial Design Portfolio 1 Cr. Role and actual development of an industrial designer's portfolio with emphasis on importance of the portfolio in communicating with prospective employers throughout the career. Prerequisite: 304-340. F-W

304-440 Industrial Design IV 4 Cr. Professional level of understanding and skill applied to advanced design problem chosen in consultation between student and instructor. Prerequisite: 304-430. F-W

304-451 Interior Design Practicum 3 Cr. Work experience with an interior designer or in design-related field arranged with interior design work experience coordinator. Prerequisites: 304-204 and 304-205. F-W

304-480 Senior Project - Graphic Design 4 Cr. Exploration of an advanced graphic design topic through an extensive project: research, production specification, and development of a presentation system. Prerequisites: 304-380 and 304-410.

304-500 Drawing II 1-3 Cr. Continuation of 304-100; exploitation of media for creative and expressive ends. Initial enrollment

must be for 3 credits. Prerequisite: 304-100. Repeatable for credit. F-W

304-501 Life Drawing I 3 Cr. Drawing the human figure in action or at rest; problems in figure composition. Prerequisites: 304-100 and 304-500. F-W

304-502 Life Drawing II 1-3 Cr. Advanced problems in figure composition and graphic interpretation of the figure. Initial enrollment must be for 3 credits. Prerequisite: 304-501. Repeatable for credit. F-W

304-503 Design 3 Cr. Application of basic design principles using various media for development of visual sensitivity to three-dimensional form. Prerequisite: 304-101. Repeatable for credit. F-W

304-509 Painting I 3 Cr. Introduction to character and use of various painting media; work from still life and life with reference to problems of two-dimensional color composition. Prerequisite: 304-500. F-W-S

304-510 Painting II 1-3 Cr. Advanced work in oil painting; exploitation of medium for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-509. Repeatable for credit. F-W-S

304-511 Sculpture I 3 Cr. Introduction to sculptural concepts. Prerequisite: 304-500, or equivalent. F-W

304-512 Sculpture II 1-3 Cr. Advanced problems in sculpture; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-511. Repeatable for credit. F-W

304-513 Ceramics I 3 Cr. Basic design and techniques of ceramic production for artist/potter; forming, firing and surface treatment. F-W-S

304-514 Ceramics II 1-3 Cr. Use of clay, glazes and kiln for design and production of high-fired ceramics. Initial enrollment must be for 3 credits. Prerequisite: 304-513. Repeatable for credit. F-W-S

304-515 Art Metal I 3 Cr. Design and construction of jewelry and objects in precious and non-precious materials with relationship to human interaction. Prerequisite: 304-101, or equivalent. F-W-S

304-516 Art Metal II 1-3 Cr. Advanced problems in design and construction of jewelry, hollow forms and objects in precious and non-precious materials. Initial enrollment must be for 3 credits. Prerequisite: 304-515. Repeatable for credit. F-W-S

304-517 Printmaking I 3 Cr. Introduction to the concepts and techniques of printmaking. Prerequisites: 304-100 and 304-101. F-W-S

304-518 Printmaking II 1-3 Cr. Advanced work in the processes of relief, silkscreen, etching, or lithographic printmaking. Initial enrollment must be for 3 credits. Prerequisites: 304-500 and 304-517. Repeatable for credit. W-S

304-520 Clay and Glaze Laboratory 1 Cr. Procedures and processes in testing of clays; formulation of clay bodies and development of clay slips and ceramic glazes for artist/potter. Prerequisite: 304-513 or 304-514 or consent of instructor.

304-522 Modern Art 3 Cr. The main currents and developments in art from Monet and Cezanne to 1950. F

304-526 Greek and Roman Art 3 Cr. The arts of ancient Greece and Rome.

304-528 Italian Renaissance Art 3 Cr. Architecture, sculpture, and painting of the Italian Renaissance from 14th to 17th century.

304-529 Northern Renaissance Art 3 Cr. Renaissance art in Northern Europe from 15th to 17th century.

304-531 Southern Baroque Art 3 Cr. Development of art in Southern Europe from Italian Renaissance to 18th century.

304-532 Economics of House Furnishing 3 Cr. Study of consumer house furnishing problems based on utilitarian, economic, aesthetic and social values of household commodities. Quantity and quality budgets at different price levels. Visits to house furnishing markets. F

304-533 Period Furnishings 3 Cr. A survey of furniture and furnishings in the western world. F

304-534 Fashion Illustration 3 Cr. Problems in graphic techniques, fashion illustration, contemporary fashion design and advertising presentation. Prerequisite: 304-101. Repeatable for credit. F-W

304-545 Senior Seminar 1 Cr. Professional practice including portfolio and senior exhibition; current ideas and career opportunities within the art profession. Prerequisite: Senior standing in program. S

304-590 A Design Problem: Team Approach 3 Cr. Interdisciplinary team approach to design concepts solving specific problems. Results represented by working prototype. Prerequisite: advanced level in individual students to be selected by instructor Repeatable for credit. F-W-S

304-602 American Art 3 Cr. Development of visual arts in the U.S. from colonial period to 1950.

304-603 19th Century Art in Europe 3 Cr. History of European art from about 1800 to 1900.

304-604 Art Since 1950 3 Cr. Developments in painting and sculpture in Europe and America since 1950.

304-606 Oriental Art 3 Cr. Art from prehistoric times to 19th century in China, Japan and their spheres of influence.

304-607 Aesthetics 3 Cr. Examination of the philosophers of contending theories in art. Prerequisite: 304-522. F-W

305-208 Pre-teaching Observation Seminar 3 Cr. Observation of art education teaching practices in the field; various hands-on teaching assistant duties with young children; experience with actual teaching problems through observation, team teaching and microteaching. F

305-311 Curriculum Development for Art 2 Cr. Needs and methods for developing a sequential K-12 art curriculum. W

305-402 Introduction to Teaching Art in Elementary Schools 3 Cr. Development of basic knowledge and skills needed to foster and extend creative growth in children. F-W

305-403 Introduction to Teaching Art in Secondary Schools 3 Cr. Development of art principles and practices that expand creative growth and development in secondary school students. F-W

305-408 Student Teaching in the Elementary School—Art 4 Cr. Directed teaching and community experience in selected off-campus elementary schools. Prerequisites: 305-402 and 305-403. F-W

305-409 Student Teaching in the Secondary School—Art 4 Cr. Directed teaching and community experience in selected off-campus secondary schools. Prerequisites: 305-402 and 305-403. F-W

BIOLOGY

308-122 Biology—An Environmental Approach 3 Cr. Principles of biology: cellular metabolism, heredity and relationships between living organisms and their environments. F-W-S

308-132 Physiology and Anatomy 4 Cr. Basic concepts of physiological processes and anatomy of all organ systems of humans, based on dissection of a cat; embryological development. F-W-S

308-142 Botany 4 Cr. Introduction to structure and function of plants, survey of plant kingdom, and structure and life history of representative forms of plant life. F-W

308-150 Man and the Environment 2 Cr. Man's relationship to world environment; contemporary problems: air and water pollution, biocides, solid waste disposal, depletion of natural resources, menace of overpopulation and impending food crisis. F-W-S

308-152 Zoology 4 Cr. Introduction to fundamental concepts of animal life, survey of animal kingdom, structure and physiology of representative animals, evolutionary relationships. F-W

308-206 Food Service and Environmental Sanitation 1 Cr. Microbial problems in food service industry: sanitation, storage, handling, distribution, serving, personnel, equipment and facilities. F-W

308-220 Physiology of Disabilities 3 Cr. Etiology, pathology, clinical symptoms, prognosis, treatment, physical limitations resulting from specific diseases and disabilities. Prerequisite: 308-132. F-W

308-306 General Microbiology 4 Cr. Structure and physiology of yeasts, molds and bacteria; growth requirements, methods used in culture and identification, bacterial analysis of water and milk, other problems in sanitation and food bacteriology. F-W

308-310 Human Sexual Biology 3 Cr. Structure, function and coordination of human reproductive organ system; reproductive cell formation and function; problems of fertility, sterility, sexuality, birth control and relationship to population challenges. Prerequisite: 308-122 or 308-132. F-W

308-332 Genetics 2 Cr. Fundamental principles of genetics, their functions and applications to plants, animals and man. F-W

308-333 Genetics Laboratory 1 Cr. Perform genetic crosses to reinforce understanding of principles of heredity; *Drosophila* (fruit fly) will be primary experimental organism. Experience in test breeding, observing, tabulating and interpreting results, as in actual genetic research. Prerequisite: 308-332 or concurrent registration. F-W

308-342 Community Hygiene 2 Cr. Disease prevention through education, sanitation, isolation and immunization; public health programs and operation of federal and state laws. F-W-S

308-350 Ecology 3 Cr. Interrelationships of organisms with their abiotic and biotic environments. Prerequisites: 308-142, 308-152 or concurrent registration. F-W

308-352 Applied Botanical Practice 3 Cr. Plant care, management, and propagation skills. Prerequisite: 308-142. F-W-S

308-358 Introductory Pharmacology 2 Cr. Fundamental principles of major groups of drugs; actions and interactions in human body. (Some science background recommended). F-W

308-362 Advanced Physiology 3 Cr. Physiological processes: digestion, respiration, metabolism, excretion, circulation and muscle. Histological studies of blood, ex-

periments with frog and turtle hearts, nerve and muscle preparation. Respiratory, nerve, circulatory and muscle experiments on human body. Prerequisite: 308-132. F-W

308-506 Food Microbiology 3 Cr. Methods of food preservation, their effectiveness and related food spoilage by microorganisms. Quality control techniques used to determine presence of specific groups of economically important microorganisms. Prerequisite: 308-306. F-W

308-650 Neuroanatomy 2 Cr. Phylogenetic adaptations of human behavior using comparative model; sensory, central and motor behavior of animals as they relate to human behavior. F

308-651 Psychobiology 2 Cr. Phylogenetic adaptations of human behavior using comparative model; sensory, central and motor behavior of animals as they relate to human behavior. W

CHEMISTRY

311-115 General Chemistry I 5 Cr. Fundamental principles of chemistry: structure, compound formation, bonding, reactions, oxidation-reduction, solutions, colloids, equilibrium and acids and bases; demonstration of applications to contemporary problems, environmental effects. Special course fee. F-W-S

311-125 Principles of Chemistry for Health Sciences 5 Cr. Principles of chemistry: general, reaction stoichiometry, equilibrium and thermodynamics. For dietetics, food service administration and other allied health science majors. Special course fee. F-W

311-135 College Chemistry I 5 Cr. Principles of inorganic chemistry, properties of important elements and compounds. More rigorous approach and more extensive coverage than in 311-115. Normally followed by 311-136. Special course fee. Prerequisite: Demonstrated academic competence. F

311-136 College Chemistry II 5 Cr. Reactions and properties of common elements and inorganic compounds; oxidation-reduction and solution equilibria; electrochemistry. Lab work in qualitative analysis for common ions. Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. W

311-201 Organic Chemistry Lecture 3 Cr. Introduction to chemistry of carbon compounds; characteristic reactions of the several functional groups; also aliphatic and aromatic compounds. Taken concurrently with 311-203. Prerequisite: 311-115 or 311-125 or 311-135. F-W

311-203 Organic Chemistry Laboratory 1 Cr. Lab course to be taken concurrently with 311-201. Special course fee. F-W

311-204 Organic Chemistry II lecture 3 Cr. Basic organic chemistry; organic reaction mechanisms. Taken concurrently with 311-206. Prerequisite: 311-201. W

311-206 Organic Chemistry II laboratory 1 Cr. Lab course to be taken concurrently with 311-204. Special course fee. Prerequisites: 311-201 and 311-203. W

311-501 Physical Chemistry Lecture 3 Cr. Fundamental physical chemistry; behavior of gases, liquid state, properties of solutions, principles of thermodynamics, thermochemistry. Taken concurrently with 311-503. Recommended: 311-531. Prerequisites: 311-115 or 311-125 or 311-135 and 355-156. F-W

311-511 Biochemistry 4 Cr. Fundamental chemistry and metabolism of carbohydrates, lipids and proteins; second- and third-order structure of proteins; chemistry of nucleic acids; nature and dynamics of enzymes and enzyme action; biological oxidations; lab work in polarimetry, colorimetry, chromatography and quantitative analytical procedures (Kjeldahl determination of protein nitrogen). Special course fee. Prerequisites: 308-132 and 311-201. F-W

311-515 Food Chemistry 3 Cr. Organic biochemistry of foods: enzymatic and non-enzymatic changes associated with food preparation and storage (Maillard-Browning reaction), denaturation of protein, changes in color, odor, texture and nutritive value. Techniques for isolation and identification of biochemical constituents of foods. Special course fee. Prerequisites: 311-115 or 311-125 or 311-135, 311-201 and 311-203. W

311-521 Textile Chemistry 3 Cr. Chemical and physical properties of monomers and high polymers of following natural and synthetic fibers: cotton, cellulose derivatives, silk, wool, linen, nylon, polyesters, acrylics, olefins and polyurethanes. Lab analysis of textile fibers, textile fiber mixtures and dyestuffs. Physical properties of textiles, synthesis of textile polymers, crease resistance; textile finishing. Special course fee. Prerequisite: 311-115.

311-531 Quantitative Analysis 3 Cr. Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques. Special course fee. Prerequisite: 311-115 or 311-135. W

311-535 Instrumental Methods of Analysis 3 Cr. Application of instrumental methods to chemical analysis: electrochemical, spectral; applications of common instrumental methods. Techniques for obtaining reliable results by instrumental means. Recommended: 311-531. Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. F

311-541 Chemistry of Materials 3 Cr. Practical applications of principles and facts of chemistry to technological problems: structure and properties of common materials; fuels (solid, liquid, gaseous, fossil, nuclear) and air pollution; water (domestic, industrial, sewage) and water pollution; electrical properties (cells, batteries, fuel cells, electrolysis) and corrosion of metals; protective coatings (paints, varnishes, enamels, lacquers, plating, anodizing, cladding). Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. F-W

311-542 Industrial Hygiene 3 Cr. Principles and techniques for recognizing, evaluating, and controlling existing or potential occupational health hazards that affect employee safety and health.

311-553 Environmental Chemistry 3 Cr. Principles and origins of chemical reactions that lead to ecological imbalance; systems that have contributed to large-scale environmental pollution and/or are of current importance; chemical technology needed to correct imbalance. Special course fee. Prerequisite: 311-115 or high school chemistry and consent of instructor. F-W

311-612 Advanced Biochemistry 3 Cr. Molecular biology of humans and other organisms; biosynthesis and catabolism, emphasizing enzyme action; chemistry of specific tissues and fluids. Prerequisites: 311-201, 311-203 and 311-511. F-W

ECONOMICS

320-201 General Economics 3 Cr. Introduction to basic elements of economics; analysis of institutions, issues and policy; theories of price, national income and employment. Not open to students taking 320-210 and 320-215. F-W

320-210 Principles of Economics I 3 Cr. Basic economic concepts and economic institutions, national income and employment analysis, business fluctuations, money and banking; monetary fiscal policies. Prerequisite: sophomore standing. F-W-S

320-215 Principles of Economics II 3 Cr. Price theory, income distribution, factor pricing, market mechanisms, functions of economic system, labor and collective bargaining and international economics. Prerequisite: 320-210. F-W-S

320-325 Economic and Business Statistics 3 Cr. Method of collection, analysis, and presentation of economics, social, and business data. Ratios, frequency distributions, averages, variability, linear regression, correlation, time series analysis, and principles of index numbers. Prerequisite: 355-118, or equivalent. F-W

320-335 Personal Securities Investments 2 Cr. Major aspects of security invest-

ments: common and preferred stocks, bonds, mutual funds. Prerequisite: 320-201 or 320-210.

320-410 Microeconomics 3 Cr. Value and distribution theory; analysis of demand-firm, industry and utility; pricing of production factors. Prerequisite: 320-215. F

320-415 Macroeconomics 3 Cr. Determination of aggregate income, employment, growth rates and price levels; monetary and fiscal policies necessary for full employment. Prerequisite: 320-215. W

320-420 Labor Economics 3 Cr. Basic labor theory; history of organized labor in western industrial societies; collective bargaining as viewed by labor, management, government and public; institutions involved in modern labor relations. Prerequisite: 320-201 or 320-210. F-W-S

320-421 Collective Bargaining and Labor Relations 2 Cr. Introduction to collective bargaining in the U.S.; formation, substance and administration of a labor agreement, current labor law, role of NLRB. Prerequisites: 320-201, 320-210 or consent of instructor. F-W-S

320-435 Money and Banking 3 Cr. Money and bank credit, modern monetary theories, monetary policy. Prerequisite: 320-201 or 320-210. F

320-440 Principles of Investment 3 Cr. Principles and techniques of investment for people in business; construction and management of security portfolios. Prerequisites: 160-335 and 160-340. WE

320-445 Public Finance 3 Cr. Public finance at all governmental levels; taxation, expenditures, debt management and fiscal policy. Prerequisite: 320-215. W

320-450 Energy Economics 3 Cr. Micro and macro-economic theory applied to energy problems; demand for energy; supply of energy (costs of traditional and non-traditional sources); regulatory problems of energy production; and effect of energy problem on employment, GNP, balance of payments and income distribution. Prerequisites: 320-210, 320-215 or consent of instructor.

320-470 Economic Model-Building and Forecasting 3 Cr. Quantitative models and methods applied to forecasting; regression techniques. Prerequisites: 320-215, 354-331 and 355-275 or consent of instructor. F

320-480 Principles of International Trade 3 Cr. Theory and practice. Capital movements; foreign exchange rates and controls; balance of payments; tariffs. Prerequisite: 320-215. F-W

320-550 Managerial Economics 3 Cr. Decision-making, demand and cost analysis, competitive and non-competitive price systems, marketing problems, capital

budgeting and criteria for investment decisions. Prerequisite: 320-215. F-W

320-610 Contemporary American Economic Problems 3 Cr. Survey of domestic economic problems at advanced level with special emphasis on applications and effects on industry. Prerequisites: graduate standing and three credits in Economics.

320-680 International Trade 3 Cr. Theory and practice of capital movements; foreign exchange rates and controls; balance of payments; tariffs. F-W

ENGLISH AND JOURNALISM

326-090 Writing Workshop 3 Cr. Pass/fail. Remedial writing course open to all students; especially for those who have particular writing problems and need individual instruction. Will not count toward graduation nor fulfill English requirement. F-W

326-101 Freshman English—Composition 3 Cr. Principles and practices of writing; documented paper. Prerequisite: Acceptable score on English Department Placement Exam or a passing grade in 326-090. F-W-S

326-102 Freshman English—Reading and Related Writing 3 Cr. Readings focused on a theme reflected in literature. Topics and approaches developed by each instructor; opportunity for responsible, independent study; requires intensive practice in composition. Prerequisite: 326-101. F-W-S

326-111 Freshman English—Honors I 3 Cr. Readings in world literature and related writing for training in composition techniques; documented paper. Prerequisite: Departmental selection based on ability. F-W

326-112 Freshman English—Honors II 3 Cr. Continuation of 326-111. Prerequisite: 326-101 or 326-111 or departmental selection based on ability. F-W

326-203 American Poets 3 Cr. Contemporary American writers of narrative, dramatic and lyric poetry. Prerequisite: 326-102 or 326-112.

326-204 The Short Story 3 Cr. Style, structure, history and development of short story as a literary form. Prerequisite: 326-102 or 326-112. F

326-250 Classical and Biblical Literature in Translation 3 Cr. Selections from Greek, Hebrew and Latin literature. Prerequisite: 326-102 or 326-112. F-W

326-286 Detective Fiction 3 Cr. Literary, historical and social implications of detective fiction from its inception to the present. Includes popular writers, literary writers, non-print media and criticism. Prerequisites: 326-102, 326-112, consent of instructor.

326-300 Literature for Young Children 3 Cr. Critical survey of literature for children (birth to age 8); introduction to and directed practice of presentation methods. Prerequisite: 326-102 or 326-112. F-W

326-303 The Family in Literature 3 Cr. Literature about the family selected from several historical periods and cultures. Prerequisite: 326-102 or 326-112. F

326-306 Reporting and News Writing 3 Cr. Theory and practice of news gathering and reporting; basic techniques of journalistic writing. Prerequisite: 326-102 or 326-112. F-W

326-310 Journalism Practicum 1 Cr. Work on regularly published newspaper and submit articles for evaluation and publication. Prerequisite: Journalism minor or concentration. Repeatable for credit. F-W

326-320 Business Writing 3 Cr. Effective techniques for writing persuasively in business communications: requests, cordial contact, sales and education and training programs. Prerequisite: 326-102 or 326-112. F-W

326-345 Creative Writing 3 Cr. All aspects of imaginative writing. Prerequisites: 326-102 or 326-112 and consent of department. Repeatable for credit. F-W

326-346 Expository Writing 3 Cr. Factual writing; documented investigative paper. Prerequisite: 326-102 or 326-112. F-W

326-347 Critical Writing 3 Cr. The art of evaluation and judgment; writing critical reviews and articles; documented critical paper. Prerequisite: 326-102 or 326-112. F-W

326-348 American Literature 3 Cr. American prose and poetry from its beginnings to World War I. Prerequisite: 326-102 or 326-112. F-W-S

326-350 Modern British Literature 3 Cr. Selected poetry, prose, and fiction produced since World War I. Prerequisite: 326-102 or 326-112. F-W

326-351 European Literature in Translation 3 Cr. Selected poetry, prose and drama from Dante to present. Prerequisite: 326-102 or 326-112. W

326-355 Recent World Literature 3 Cr. Selected readings in Contemporary Literature in Translation. Prerequisites: 326-102, 326-112.

326-360 Modern American Literature 3 Cr. Selected poetry, prose and drama produced since World War I. Prerequisite: 326-102 or 326-112. F-W-S

326-372 Women Writers 3 Cr. Analyze writing of prominent American and British women novelists and poets of 19th and 20th centuries; criticism of women writers. Prerequisite: 326-102 or 326-112. F

326-380 Best-Sellers 3 Cr. Fiction and non-fiction best-sellers: expression of and impact on popular culture. Prerequisite: 326-102 or 326-112. F-W

326-381 Recent American Literature 3 Cr. American poetry, fiction and drama since 1950. Prerequisite: 326-102 or 326-112. W

326-385 Science Fiction 3 Cr. Critical survey of popular and classic science fiction. Prerequisite: 326-102 or 326-112.

326-400 English Literature 3 Cr. Selected prose and poetry from Beowulf to 1798. Prerequisite: 326-102 or 326-112. F

326-401 English Literature 3 Cr. Selected prose and poetry from 1798 to modern times. Prerequisite: 326-102 or 326-112. W

326-406 Shakespeare 3 Cr. Several representative plays and selected criticism. Prerequisite: 326-102 or 326-112. W

326-410 Writing and Selling Feature Articles 2 Cr. Practice in techniques of writing and selling feature articles for appropriate markets; submission of articles for potential publication. Prerequisite: 326-102 or 326-112. F

326-425 Copy Editing and Preparation 2 Cr. Develop skill in expanding and reducing written materials; experience in copy reading, proofreading, headlines. Prerequisite: consent of instructor. W

326-450 Studies in Literature (Theme, Author, Genre) 2-3 Cr. A selected writer's work, a significant theme in literature or a genre (one not offered as a separate course of similar duration in departmental curriculum). Prerequisites: 326-102 or 326-112 and three credits of literature or consent of instructor. Repeatable for credit. F-W

326-500 Literature for the Reading Child and Adolescent 3 Cr. Critical survey of literature for children (age 8 to beginning to read adult literature); adolescent literature and media presentations of literature. Prerequisite: 326-102 or 326-112. W

326-515 Technical Writing for Home Economics 3 Cr. Specialized writing done by home economists in business; experience in preparing reports, letters and other appropriate materials. Prerequisites: 326-102 or 326-112 and junior standing. F-W-S

326-516 Technical Writing for Industry 3 Cr. Type of writing current in industry; writing business reports and other materials. Prerequisites: 326-102 or 326-112 and junior standing. F-W

326-518 Mass Communication in American Society 3 Cr. History, social implications and future of mass media of communications. Prerequisite: 326-102 or 326-112. F

326-525 Writing Technical Articles 3 Cr. Experience in writing technical articles; requirements for publication in profes-

sional media. Research, write and submit individual projects of suitable length and maturity connected with area of specialization. Prerequisites: 326-515 and 326-516 or consent of instructor.

326-541 Psycholinguistics 3 Cr. Linguistics behavior and psychological processes responsible for it. Prerequisite: 326-102 or 326-112. W

326-546 Research Reporting 3 Cr. Effective organization and presentation of individual research. Prerequisites: 326-102, 326-112. F

326-601 Juvenile Fiction Seminar 1-3 Cr. Juvenile fiction: works, themes, genres, issues, variable credit. Variable content repeatable. Prerequisites: 326-300 or 326-500, senior standing or consent of instructor.

FRENCH

328-100 Menu French 1 Cr. Pronunciation of food items and menu terms. Vocabulary comprehension. Basic phrases for haute cuisine and for ordering food in a restaurant. Reading recipes in French. F-W-S

328-101 Elementary French I 4 Cr. Introduction to basic audio-lingual skills, essentials of grammar and reading for comprehension. Supplementary materials drawn from cultural heritage of France. Minimum of 1 laboratory hour required. F

328-102 Elementary French II 4 Cr. Continuation of 328-101. A minimum of 1 laboratory hour required. Prerequisite: 328-101. W

328-201 Intermediate French I 4 Cr. Grammar review, vocabulary improvement, oral practice, original composition, and readings that stress French civilization and literature. Minimum of 1 laboratory hour required. Prerequisite: 328-102 or two years of high school French. F

328-202 Intermediate French II 4 Cr. Continuation of 328-201. Minimum of 1 laboratory hour required. Prerequisite: 328-201. W

SPANISH

329-100 Basic Spanish 1 Cr. Pronunciation, basic phrases for everyday situations, comprehension of short written and spoken sentences, brief grammar summary, limited vocabulary.

329-103 Elementary Spanish I 4 Cr. Introduction to conversational Spanish as spoken today in Mexico and South America. F-W

329-104 Elementary Spanish II 4 Cr. Continuation of 329-103. Conversational Spanish as spoken today in Mexico and South America. Prerequisite: 329-103. W

329-121 Practical Spanish I 2 Cr. Pronunciation, basic phrases for everyday situations, comprehension of short written and spoken sentences, basic grammar summary, introductory vocabulary with program-specific modules, cross-cultural topics. Not open to students who have completed Spanish 103. F-W-S

329-122 Practical Spanish II 2 Cr. Elementary vocabulary, conversational phrases, hispanic culture, present and past tense verbs, object pronouns, choice of career-related language supplements. Not open to students who have completed Spanish 103. Prerequisites: 329-121, one semester of high school Spanish F-W-S

329-201 Intermediate Spanish I 4 Cr. Extensive development of vocabulary including common idioms, aural comprehension, correct pronunciation, recognition of verb tenses in written Spanish. Readings based on contemporary life in Hispanic countries. Listening practice with authentic recorded materials. Prerequisites: 329-104, two years of high school Spanish F-W-S

329-202 Intermediate Spanish II 4 Cr. Complete grammar review of standard Spanish, applicable to both conversational situations and business or personal correspondence. Review of essential vocabulary and phrases. Accuracy and fluency in spontaneous conversation and free composition. Prerequisites: 329-201, three years of high school Spanish F-W-S

GEOGRAPHY

336-104 World Geography 3 Cr. Introduction to regional and cultural geography of the world; physical and human resources of major areas of the globe. F

HISTORY

338-105 History of America 3 Cr. Survey of U.S. history. Not open to those taking the 22-credit minor nor to those who have completed 338-120 or 338-121. F-W

338-120 Early United States History 3 Cr. U.S. history to 1865: political, economic and social forces that have shaped the nation to close of Civil War. Not open to those who have completed 338-220. F-W

338-121 Modern United States History 3 Cr. U.S. history since 1865: political, economic and social forces that have shaped the nation since close of Civil War. Not open to those who have completed 338-105. F-W-S

338-140 Western Civilization 3 Cr. Survey of Western civilization along the Nile, the Fertile Crescent, through Greece, Rome, the Middle Ages, the Renaissance, and the Reformation. F

338-141 Western Civilization 3 Cr. Survey of Western civilization from Reformation to present. W

338-210 Modern World 3 Cr. Modern trends in terms of historical backgrounds as frame of reference for interpreting modern world. F-W-S

338-320 History of Russia 3 Cr. Survey of Russia's historical development since 862. F

338-325 Recent History of the United States 2 Cr. U.S. history in 20th century; recent world development in which U.S. has played a part. 338-330 History of World War II 3 Cr. Causes, conduct and effects of World War II. F-W

338-340 English History 3 Cr. Social, political, religious, military and economic history of Great Britain from Restoration (1660) to modern times. F

338-360 Asian History 3 Cr. Survey of political, social, religious and economic history of Asia, India, China, Japan and the Philippines in modern world. W

338-380 Latin American History 3 Cr. Political, social and economic history of Middle and South America, pre-Columbian to present. W

338-410 Biography of World Leaders 2-3 Cr. Readings in biographies and autobiographies of modern world leaders. S

338-430 Western U.S. History—The Trans-Mississippi West 3 Cr. Development of trans-Mississippi West in 19th century: exploration, missionaries, settlement, fur trade, Indian problems, slavery, admission of new states, mining and cattle industries, agriculture, transportation, communication, culture and land policies.

APPLIED MATHEMATICS

354-X98 Computer Science Field Experience 2 Cr. Off-campus work and study in approved position to better understand challenges and potentials of various careers related to computers. F-W

354-130 Elementary Statistics 2 Cr. Organization and presentation of data, computation of descriptive statistics, regression and correlation theory and computation; elementary sampling theory; introduction to normal and binomial distributions, tests of hypotheses. One year of high school algebra is desirable. F-W-S

354-140 Computer Concepts 2 Cr. Introduction to computing; history of computers, hardware, software and terminology; components and functions of computers; programming concepts and basic applications; running programs written by others; writing programs in BASIC time-sharing language. F-W-S

354-141 Digital Computer Programming 2 Cr. Introduction to computer systems and their use; translating language, program writing and debugging. F-W-S

354-142 Computer Applications in Business 4 Cr. Basic characteristics of business data processing systems, especially computers; hardware and software concepts, data flow and systems design and introduction to business-oriented programming. Not open to those with credit in 300-101. F-W

354-144 Computer Science I 3 Cr. Problem-solving and algorithm development using a high-level programming language. Computer organization, programming language and programming, elements of programming style, documentation, introduction to structured programming.

354-145 Computer Science II 3 Cr. Problem-solving and algorithm development using a high-level language. Structured programming concepts, debugging and testing, string processing, searching and sorting, elementary data structures, recursion and files. Prerequisite: 354-144.

354-240 Intermediate Computer Programming 3 Cr. Continuation of 354-141: subprograms, plotter output, disk I/O and advanced FORTRAN techniques. Introduction to machine and assembly language programming. Prerequisite: 354-141. F-W

354-241 Assembly Language Programming 3 Cr. Basic concepts in computer systems including computer structure, machine language, assembly languages, addressing techniques, macros, file I/O, program segmentation and linkage. Prerequisites: 354-145 or 354-240, Or equivalent. F-W

354-245 Numerical Methods 2 Cr. Computer programming and numerical methods for solution of equations, simultaneous equations, interpolation, numerical differentiation and integration and statistical analysis. Prerequisites: 355-141 and 355-153 or 355-156. F-W

MATHEMATICS

354-246 Computer Programming—Cobol 3 Cr. Introduction to computer systems and their use; development of programming practices and techniques, flowcharting, and application through business-oriented translating language. Prerequisite: 354-141. F-W

354-331 Probability and Mathematical Statistics I 3 Cr. Sets and combinatorial analysis, probability in discrete sample spaces, Bayes' rule, random variables and probability distributions, change of variable, marginal and conditional distributions, expectation, moments and moment generating functions, Chebyshev's theorem, central limit theorem. Prerequisite: 355-153 or 355-156. F

354-332 Probability and Mathematical Statistics II 3 Cr. Sampling distributions, order statistics, introduction to decision theory, estimation, hypothesis testing, nonparametric methods, regression and correlation, analysis of variance. Prerequisites: 355-154 or 355-157 and 354-331. W

354-341 Data Structures 3 Cr. Review of set theory, functions and relations; basic concepts of data; lists, strings and arrays; representation of graphs and trees; storage systems and structures; symbol tables and searching techniques; sorting (ordering) techniques. Prerequisites: 354-240, 355-275 110-556. F-W

354-441 Computer Architecture and Operating Systems I 3 Cr. Architecture of computer systems: hardware component layouts and software systems design and their interrelationships. Prerequisites: 354-141 and 354-241. F

354-442 Computer Architecture and Operating Systems II 3 Cr. I/O control and file systems, memory and processor management, data base management systems and their interrelationships. Prerequisites: 354-141 and 354-241. W

354-445 Numerical Analysis 3 Cr. Mathematical theory supporting numerical methods of computer programming for solution of equations, simultaneous equations, numerical differentiation and integration, and approximation procedures. Prerequisites: 354-245, 355-255 and 355-275. F-W

354-446 Numerical Analysis I 3 Cr. Theory and applications of numerical methods for linear algebra, non-linear equations and polynomial interpolation. Prerequisites: 355-158, 355-275, 354-145 or 354-240, Or equivalent.

354-447 Numerical Analysis II 3 Cr. Theory and applications of numerical methods for approximation, numerical integration and differentiation, differential equations, and Fourier analysis. Prerequisites: 354-446, 355-255.

354-449 Software Engineering 3 Cr. Software development lifecycle, programming languages and environments, program testing, documentation, software management and organization. Class software development project. Prerequisites: 354-341, 354-145 or Consent of instructor F-W-S

354-475 Applied Mathematics Internship 2-8 Cr. Off-campus work and study in approved position to gain experience in using computer and/or statistical techniques in the analysis and solution of real-world problems. Interns receive salaried appointments with cooperating companies for summer or summer plus one semester. Prerequisite: junior standing. F-W-S

354-490 Mathematical Models I 2 Cr. Supervised experiences in construction of mathematical models for the solution of problems in area of student's needs and interests; resource materials. Prerequisite: Senior standing in Applied Mathematics. F

354-491 Mathematical Models II 2 Cr. Continuation of 354-490. Prerequisite: 354-490. W

354-530 Statistical Methods 3 Cr. Histograms, mean and standard deviation, combinatorics, probability; binomial, hypergeometric, normal, chi-square, T and F distributions and their uses; statistical inference; contingency tables, linear models, analysis of variance with appropriate applications. Prerequisites: 355-120, or equivalent and three years of high school math. F-W-S

354-531 Design of Experiments I 2 Cr. Linear and curvilinear regression, single-factor designs, confidence ellipsoids for means, blocking, Latin and other squares, factorial designs. Prerequisite: 354-332 or consent of instructor. F

354-532 Design of Experiments II 2 Cr. Fixed-effect, random-effect and mixed models; nested and nested-factorial designs, split-plot designs, confounding in blocks, analysis of covariance, response surfaces, sequential analysis. Prerequisite: 354-531. W

354-535 Applied Stochastic Processes I 2 Cr. Stochastic processes, Markov chains, stationary distributions, construction of Markov processes, Poisson and birth and death processes, review of statistical inference as applied to these processes. Prerequisites: 354-332 or 354-530 and consent of instructor.

354-536 Applied Stochastic Processes II 2 Cr. Application of topics introduced in 354-535: theory of reliability; branching, social and behavioral, and queueing processes. Prerequisite: 354-535.

354-590 Topics 1-3 Cr. Topics of current importance in applications of mathematics to problems in business, industry, government or society. May be repeated for additional credit with consent of program director. S

354-640 Computer Use in Education 3 Cr. Computer use in administrative, research and instructional aspects of education. S

355-010 Fundamentals of Algebra 2 Cr. Review of fundamental principles of elementary algebra. Credit earned for Mathematics 010 will not count toward graduation. F-W

355-118 Concepts of Mathematics 4 Cr. Elementary concepts in mathematical language and reasoning, sets, number systems and theory, algebraic equations, statistics and probability, geometry,

computers; historical survey. Prerequisite: Minimum of one year high school algebra. F-W-SE

355-119 Business Mathematics 4 Cr. Review of arithmetic and basic algebra; simple and compound interest, inventory control and purchase planning; applications to retailing, marketing, accounting, finance, consumerism and insurance. F-W-SO

355-120 Introductory College Mathematics I 4 Cr. Set theory, logic and methods of proof, number systems and equations, use of time-shared computer, vectors, matrices and inequalities. Prerequisite: Demonstrated proficiency. F-W-S

355-121 Introductory College Mathematics II 4 Cr. Open sentences; relations and functions; algebra of trigonometric, exponential and logarithmic functions. Prerequisite: 355-120. F-W

355-123 Finite Mathematics With Applications 4 Cr. Real number system, systems of linear equations and inequalities, sets, functions, vectors, matrices, probability, linear programming, theory of games, Markov chains. Prerequisite: 355-120 or consent of the department.

355-153 Calculus I 4 Cr. Functions, limits, continuity, bounds, sets; the derivative of functions and applications; exponential, logarithmic, trigonometric and inverse functions. Not open to those with credit in 355-154, 355-156, 355-157 or 355-158. Prerequisite: 355-121, or equivalent. F-W-S

355-154 Calculus II 4 Cr. Continuation of 355-153; antiderivatives; integration theory and techniques, applications; parametric equations, vectors. Prerequisite: 355-153. F-W

355-156 Calculus and Analytic Geometry I 5 Cr. Review of real numbers, inequalities, absolute values, intervals and continuity; analytic geometry of the plane, limit concepts, derivatives of algebraic functions, definite integral. Not open to those with credit in 355-153, 355-154 or 355-157. Prerequisite: Demonstrated proficiency. F

355-157 Calculus and Analytic Geometry II 5 Cr. Application of derivative and definite integral; conic sections and other algebraic curves; calculus for rational, algebraic, circular, exponential and trigonometric functions; formal integration. Prerequisite: 355-156. W

355-158 Calculus III 3 Cr. Formal integration continued; parametric equations, polar representation, Cauchy's formula, Taylor's theorem, infinite series, vectors, partial differentiation, multiple integration. Prerequisite: 355-154 or 355-157. F-W

355-255 Differential Equations 3 Cr. Common types of ordinary differential equations of first and second order; linear equations with constant coefficients; series solutions, numerical approximations, systems of ordinary equations. Prerequisites: 355-154 or 355-157 and 354-141 or concurrent registration. F-W

355-262 Modern Geometry 3 Cr. Development of logical discourse, betweenness properties and plane separation, geometric models of axiomatic systems, modern geometry of triangle and circle, transformations (linear, circular), orthogonal systems of circles, elliptic and hyperbolic geometry. Prerequisite: 355-153 or 355-156. WO

355-275 Linear Algebra 3 Cr. Algebra of linear transformations and matrices. Determinants, equivalence relations, rank systems of equations, vector spaces, orthogonal transformations, characteristic equations and quadratic forms. Prerequisite: 355-153 or 355-156. F-W

355-350 Vector Analysis 3 Cr. Basic theory of vectors. Vector differential calculus and vector integral calculus of two and three dimensions with applications. Prerequisite: 355-158. F-W-S

355-370 Modern Algebra I 3 Cr. Set theory, mappings, equivalence relations and classes, mathematical induction, Peano's postulates, isomorphisms; development of natural numbers, integers, rational, and real numbers; introduction to integral domains and rings. Prerequisite: 355-154 or 355-157. F

355-371 Modern Algebra II 3 Cr. Continuation of 355-370; rings, integral domains, fields, polynomials, groups, vector spaces; introduction to algebra of matrices. Prerequisite: 355-370. W

355-450 Real Analysis I 3 Cr. Rigorous development of advanced topics in analysis; functions, real numbers, sequences, Cartesian spaces, sequences of functions, limit superior and inferior, continuous functions. Prerequisite: 355-154 or 355-157. F

355-451 Real Analysis II 3 Cr. Continuation of 355-450; differentiation, integration, infinite series. Prerequisite: 355-450. W

355-460 Complex Variables With Applications 3 Cr. Complex numbers, analytic functions, elementary functions of complex variables, mapping of elementary functions, integration techniques, power series and calculus of residues. Prerequisite: 355-255. WE

MUSIC

360-101 Class Piano I 1 Cr. Group instruction in piano technique and repertoire at beginner level. One 1-hour lesson per week; additional practice time required. F-W

360-102 Class Voice I 1 Cr. Group instruction in vocal technique and repertoire; small ensemble performance. Optional recital. Repeatable for credit. F-W

360-103 Class Guitar I 1 Cr. Group instruction in guitar technique and repertoire at beginner level. One 1-hour lesson per week; additional practice time required. F-W

360-111 Advanced Piano I 1 Cr. Private instruction in piano technique and repertoire. One 1/2-hour lesson per week; additional practice time required; optional recital. F-W

360-112 Advanced Voice I 1 Cr. Private instruction in vocal technique and repertoire. One 1/2-hour lesson per week; additional practice time required; optional recital. F-W

360-130 Music Appreciation 2 Cr. Music materials as they pertain to perceptive listening; music and musicians from medieval times to present; students gain significant awareness of great music. F-W-S

360-201 Class Piano II 1 Cr. Continuation of 360-101 at intermediate level. One 1-hour lesson per week; additional practice time required. F-W

360-203 Class Guitar II 1 Cr. Continuation of 360-103 at intermediate level. One 1-hour lesson per week; additional practice time required. F-W

360-204 Music for the Young Child 3 Cr. Music fundamentals; individual and group instruction and performance on Orff instruments and autoharp; repertoire for preschool classroom music. F-W

360-211 Advanced Piano II 1 Cr. Continuation of 360-111. F-W

360-212 Advanced Voice II 1 Cr. Continuation of 360-112. F-W

360-264 Stage Band 1 Cr. Study and perform music of the large dance band. Open to any qualified Stout student, by audition only. Repeatable for credit. F-W

360-265 College Choir 1 Cr. Advanced choral techniques, reading and analysis of choral music of all types and periods. Concert and radio appearances. Repeatable for credit. F-W

360-266 Stout Concert Band 1 Cr. Fundamentals of musical expression, tone production and quality, and special problems of technique. Membership by audition only. Repeatable for credit. F-W

360-267 Stout Symphonic Singers 1 Cr. Advanced choral techniques, reading and analysis of choral music of all types and periods. Membership by audition only. Repeatable for credit. F-W

360-268 Solo and Ensemble 1 Cr. Coaching of advanced vocal and instrumental performers for public performance. Repeatable for credit. F-W

360-269 Chamber Singers 1 Cr. Study and performance of music for small vocal ensemble; repertoire is balanced selection from all major stylistic periods. Repeatable for credit. F-W

360-303 Class Guitar III 1 Cr. Continuation of 360-203. F-W

360-311 Advanced Piano III 1 Cr. Continuation of 360-211. Repeatable for credit. F-W

360-312 Advanced Voice III 1 Cr. Continuation of 360-212. Repeatable for credit. F-W

PHILOSOPHY

365-201 Introduction to Philosophy 3 Cr. Introduction to the principal problem areas and history of philosophy, as well as to the nature of philosophical investigation. F-W

365-301 Introduction to Logic 3 Cr. Problem-solving strategies based on induction and on categorical and propositional deduction. F-W

365-305 Philosophy of Religion 3 Cr. Principal philosophical problems in the various dimensions of religious experience and belief. Prerequisite: sophomore standing. F

365-315 Eastern Philosophy 3 Cr. Philosophies of India, China and Japan: Hinduism, Buddhism, Confucianism, Taoism and Zen Buddhism. Prerequisite: sophomore standing. W

365-375 Personal and Professional Ethics 3 Cr. Ethical valuing process and major ethical standards applied to personal and professional life. F-W

365-510 Philosophy Seminar 2-4 Cr. Selected topics in philosophy including works of individual philosophers, thematic problems in history of philosophy, issues in contemporary philosophy, or relations of philosophy to contemporary problems in other areas. Prerequisites: consent of instructor and basic course in philosophy, logic or ethics. Repeatable for credit.

PHYSICAL EDUCATION

366-101 Health Survey 1 Cr. Relationship of personal health to the whole person; to develop an awareness of high level well-

ness and how life style relates to health. F-W

366-102 Personal Health 2 Cr. Prevention and care of significant physiological and sociological effects of selected personal health problems in our society. F-W

366-340 Arc Standard First Aid and Personal Safety 2 Cr. American Red Cross certification in Standard First Aid and Personal Safety; increase personal safety and accident-prevention knowledge; learn to administer emergency first aid to self or others. F-W-S

366-346 Arc Cardiopulmonary Resuscitation .5 Cr. Techniques of basic life support: recognizing respiratory and/or cardiac arrest and properly administering cardiopulmonary resuscitation (CPR) to maintain life. Successful completion results in 1-year certification in ARC Basic Life Support course in CPR. F-W-S

366-350 Prevention and Care of Athletic Injuries 2 Cr. Provides prospective physical education and/or coaching professional with basic understanding of prevention, treatment and care of athletic injuries. Prerequisite: 366-340. F

366-355 Kinesiology 3 Cr. Body movements and principles affecting them. Prerequisite: 308-132. F

366-365 Physiology of Exercise 3 Cr. Effects of exercise on sports participants: heat stress, body composition, nutrition, cardiovascular function, energy expenditure, respiratory mechanics and ventilation factors. Prerequisite: 308-132. W

367-101 Aerobic Dance .5 Cr. Developing fitness through aerobic dance. F-W

367-103 Archery/Beginning .5 Cr. F-W

367-105 Bow Hunting 1 Cr. Conservation, safety, selection and care of equipment; techniques and practical bow hunting experience. Special course fee. Prerequisite: 367-103, or equivalent. F

367-107 Badminton .5 Cr. F-W

367-109 Basketball .5 Cr. Repeatable for credit. F

367-113 Bowling .5 Cr. Special course fee. F-W

367-115 Canoe Techniques 1 Cr. Special course fee. F-W

367-121 Exercise and Fitness 1 Cr. F-W-S

367-123 Fencing .5 Cr. W

367-125 Flag Football .5 Cr. 367-126 Football .5 Cr. Repeatable for credit. F

367-128 Folk Dance .5 Cr. W

367-130 Golf/Beginning .5 Cr. Special course fee. F-W

367-131 Golf/Intermediate .5 Cr. Special course fee. Repeatable for credit. F-W

367-135 Jogging .5 Cr. The philosophy, principles and skills of jogging as an exercise and health program. F-W

367-136 Karate .5 Cr. F-W

367-138 Interpretive Dance .5 Cr. F

367-140 Orienteering 1 Cr. Special course fee. F

367-142 Outdoor Skills 1 Cr. Special course fee. F-W

367-144 Personal Defense 1 Cr. Development of physical fitness for defense consciousness; techniques of initial and basic defense skills in weapon and rape attacks. F-W-S

367-146 Racquetball .5 Cr. Special course fee. F-W

367-147 Handball .5 Cr. 367-148 Relaxation .5 Cr. F-W

367-149 Riding-Beginning Western .5 Cr. Western horsemanship: basic body position and control at the walk, trot and lope. Special course fee. 367-150 Riding-Beginning English .5 Cr. Special course fee. F-W

367-151 Riding-Intermediate English .5 Cr. English riding skills: serpentines and figure eights at advanced gaits, simple lead changes, side pass and turns on the forehand and haunches. Special course fee. Prerequisite: 367-150 or consent of instructor.

367-152 Skiing .5 Cr. Special course fee. W

367-153 Skiing—Cross Country 1 Cr. Selection of equipment, waxing; flatland, uphill and downhill techniques and touring experiences in Nordic skills. Special course fee. W

367-154 Social Dance .5 Cr. F-W

367-163 Swimming/Beginning .5 Cr. F-W

367-164 Swimming/Advanced Beginning .5 Cr. F-W

367-165 Swimming/Intermediate .5 Cr. F-W

367-172 Water Games .5 Cr. 367-173 Skin and Scuba Diving 1 Cr. Special course fee. F-W-S

367-176 Tennis/Beginning .5 Cr. F-W-S

367-177 Tennis/Intermediate .5 Cr. Repeatable for credit. F-W-S

367-180 Track and Field .5 Cr. Repeatable for credit. W

367-182 Tumbling 1 Cr. Lab course to develop tumbling skills: forward, backward and sideways rotational, springing and

vaulting movements from hands and feet; basic to advanced aerial tumbling. W

367-185 Volleyball .5 Cr. Repeatable for credit. F-W

367-187 Weight Training 1 Cr. F-W-S

367-189 Wrestling .5 Cr. Repeatable for credit. W

367-241 Advanced Lifesaving 1 Cr. Red Cross training program in knowledge and skills needed to save one's own or another's life in an emergency. Prerequisite: ARC Swimmers level. F

367-260 Recreational Golf 1 Cr. Fundamental principles of golf; skills, history, etiquette and application of techniques. Required: play 27 holes of golf, pay greens fees, furnish 3 golf balls for class use. Special course fee. S

367-265 Physical Activities for Preschool Children 2 Cr. Sequential development of physical perceptual skills in children, birth to age 5; perceptual motor activities that promote development. F-W

367-315 Adapted Physical Education 3 Cr. Diversified developmental activities suited to interests, capacities and limitations of students with disabilities who may or may not safely or successfully engage in unrestricted activities in general physical education programs. W

367-325 Recreational Leadership 2 Cr. Objectives, principles, methods and content of a recreational program; problems of facilities, equipment and leadership; program organization and administration for various age levels. F

367-340 Camp Leadership 2 Cr. Role of camp counselors in relation to objectives, organization, guidance, leadership skills and program resources in organized camps; practice in camp-craft skills. W

367-342 Water Safety Instructor 2 Cr. ARC training course. Teaching and testing of swimming, lifesaving skills and knowledge of water safety; theoretical and practical knowledge and assistance in teaching of Red Cross lifesaving and water safety courses. Prerequisite: 367-241. W

367-345 Basketball Officiating 1 Cr. Rules and officiating techniques for men's and women's basketball; preparation for DGWS and/or WIAA officiating certifications. Prerequisite: 367-255 or consent of instructor. F

367-346 Football Officiating 1 Cr. Application of football officiating rules and techniques. Prerequisite: consent of instructor. F

367-347 Wrestling Officiating 1 Cr. Rules and techniques of wrestling officiating. F

367-350 Principles of Physical Education and Athletics 2 Cr. Principles of physical education based on scientific facts and educational ideals; aims and objectives of physical education at various school levels. W

367-360 Problems in Athletics 2 Cr. Identification, interpretation and discovery of solutions for problem areas in athletics: human relationships, intellectual strategies, competitive unity, sex discrimination and sport characteristics. W

367-401 Coaching Gymnastics 2 Cr. Elements of gymnastic tumbling and use of gymnastic apparatus as part of a modern physical education program. W

367-450 Organization/Administration of Physical Education 2 Cr. Everyday problems encountered by physical education instructors, relationship of physical education to general education, objectives of physical education; utilization, planning and care of facilities and equipment; time allotment, classification of activities and children, leadership, organization, supervision, routine procedures. F

367-460 Coaching Basketball 2 Cr. Fundamentals and methods of teaching and coaching basketball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W

367-461 Coaching Football 2 Cr. Fundamentals and methods of teaching and coaching football, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. F

367-465 Coaching Competitive Swimming 2 Cr. Principles and techniques of coaching competitive swimming. Prerequisite: WSI or one year of competitive swimming. W

367-470 Coaching Baseball 2 Cr. Fundamentals and methods of teaching and coaching baseball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W

367-471 Coaching Track and Field 2 Cr. Fundamentals and methods of teaching and coaching track and field, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W

367-478 Coaching and Officiating Volleyball 2 Cr. Skills and techniques of coaching and officiating competitive volleyball. Prerequisite: 367-185 or one year competitive volleyball. F

367-490 Practicum in Coaching 1-3 Cr. On- or off-campus work and study in athletic coaching with competitive teams. Prerequisite: completion of coaching course in area of practicum. F-W

PHYSICS

372-211 Introduction to Physics 3 Cr. Introduction to principles of physics, including mechanics, fluids, heat and thermodynamics, light and sound, electricity and magnetism; their applications to specific technologies. Prerequisite: 355-120. F

372-212 Introduction to Physics: Lab 1 Cr. Measurement, analysis and presentation of laboratory data on basic physics concepts, including mechanics, fluids, heat, electricity, light and sound. Prerequisite: 372-211. F-W-S

372-221 Mechanics and Electricity 5 Cr. Concepts of mechanics: linear, circular, and trajectory motion, energy, momentum, and rotation; and electricity: static, current, magnetism, and induced EMF's. Special course fee. Prerequisites: 355-121, or equivalent and math skills test. F-W-S

372-222 Heat and Thermodynamics 2 Cr. Concepts of temperature and heat, temperature-dependent properties and processes, heat transfer; laws relating heat and other forms of energy. Prerequisite: 372-221. F-W-S

372-223 Light and Sound 3 Cr. Concepts of light, sound, and waves: sound, acoustics, geometric optics, optical instruments, interference, polarization, lasers, and holograph. Special course fee. Prerequisite: 372-221. F-W-S

372-231 General Physics 4 Cr. Algebra- and Trigonometry-based general physics course: mechanics and sound with laboratory. Prerequisites: 355-121, a math pre-test F-W-S

372-232 General Physics 4 Cr. Algebra- and Trigonometry-based general physics course: electricity and light with laboratory. Prerequisite: 372-231. F-W-S

372-241 College Physics 5 Cr. Calculus-based general physics course: mechanics and thermodynamics with laboratory. Prerequisites: 355-153 or 355-156, a math pre-test F-W-S

372-242 College Physics 5 Cr. Calculus-based general physics course: electricity, sound, light and selected topics in modern physics with laboratory. Prerequisite: 372-241. F-W-S

372-251 Topics in Astronomy 1 Cr. Qualitative analysis emphasizing physical principles of selected topics in astronomy. Significance of modern methods of obtaining astronomical information. F

372-252 Laser Light and Waves 1 Cr. Wave properties of laser light; interference and diffraction as general properties of waves; importance of interference and diffraction effects in laser light; holography and other applications of laser light. W

372-254 Earth Physics 1 Cr. Physical processes that determine properties of the earth: rock formation, mountain building, earthquakes, weather effects and other geologic topics in framework of physics. F

372-261 Science of High Fidelity and Music 2 Cr. Application of principles of physics to musical sounds, musical instruments, and the production and high fidelity reproduction of music. F

372-281 University Physics I 5 Cr. Calculus-based general physics course: mechanics and thermodynamics with laboratory. Prerequisites: 355-154 or 355-157 or concurrent registration, Math pretest. W

372-282 University Physics II 5 Cr. Calculus-based general physics course: electricity, sound, light, and selected topics in modern physics with laboratory. Prerequisite: 372-281. F

372-325 Strength of Materials 3 Cr. Fundamental theory of strength of materials. Analysis of tension, compression, shear, biaxial tension and compression, torsion, stresses and deflection of beams. Prerequisites: 372-221 and 355-153 or 355-156. F-W-S

372-355 Optoelectronics 3 Cr. Devices that utilize principles of electronics for the production or detection of light. Optical communication systems will also be considered. Prerequisites: 372-223, 110-240 or 110-244. W

372-467 Mathematical Physics 3 Cr. Methods of solving boundary value problems; Fourier series and integrals; and orthogonal functions. Prerequisites: 355-255 and 372-537. F

372-518 Microprocessors and Applications 3 Cr. Equipment, interfacing and programming for microprocessor systems. Prerequisite: Ten credits in lab-based physics or electronics and two credits in computer programming. F-W

372-519 Advanced Microprocessor Laboratory 3 Cr. Advanced project: design, construction, and trouble-shooting of a functioning microprocessor system. Prerequisites: 372-518 and consent of instructor.

372-527 Physical Electronics 3 Cr. Theory and applications of solid state electronics; basic principles of electronic devices. Prerequisites: 355-153, 372-221 and 110-240 or 110-543. W

372-529 Atomic and Nuclear Physics 3 Cr. Elements of atomic and nuclear physics. Prerequisites: 372-223 and 355-153. F

372-531 Statics 3 Cr. Essential elements of statics: simple force system, theory and application of non-concurrent forces, couples, friction, non-coplanar forces,

trusses and other structures. Prerequisites: 354-141, 355-153 and 372-221. F

372-533 Dynamics 3 Cr. Essential elements of dynamics: rectilinear, angular and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum. Prerequisite: 372-531. W

372-535 Optics 3 Cr. Optics with emphasis on the wave nature of light: interference diffraction, polarization, and coherence; their applications in holography. Prerequisites: 372-223, one year of calculus. W

372-537 Electricity and Magnetism 3 Cr. Properties of electric and magnetic fields in free space and material media. Prerequisites: 372-221 or 355-154, concurrent registration. F

POLITICAL SCIENCE

375-210 Government 3 Cr. Functioning of governmental units in the U.S.A. Political principles, processes, problems; constitutional principles. Comparison of selected foreign governments. F-W-S

375-220 State and Local Government 3 Cr. State and local governments within U.S. federal system. Recommended: 375-210.

375-260 Problems of American Foreign Policy 3 Cr. Analysis of U.S. foreign policy objectives and decision making; problems of national defense, Third World relationships, economic and resource policies, Presidential/Congressional authority, intelligence operations and public opinion.

375-310 Political Parties and Pressure Groups 3 Cr. Analysis of modern political parties. Nominating methods, campaigns, elections. Practical politics in legislative bodies; machines and bosses. Prerequisite: 375-210.

375-340 International Relations 3 Cr. World survey of conditions determining power relationships: balance of power, collective security and deterrence; role of international organizations in world politics.

375-510 Public Policy Analysis 3 Cr. Analysis of origins of public policy and policy-making process. Specific case studies of public policy. Prerequisite: 375-210 or consent of instructor. W

375-550 Politics and Technology 3 Cr. Contemporary and future technological innovations; relationship between political institutions and promotion, regulation and impact of industry and technology in the U.S. and other selected countries. Prerequisite: junior standing or senior standing. F

SOCIOLOGY/SOCIAL WORK

387-110 Introductory Sociology 3 Cr. Social interaction in human groups; relationships between individual and group; basic institutions; social change and current trends. F-W-S

387-205 Introduction to Social Work 3 Cr. Social work as a profession; history and philosophy of social services; information for teachers, counselors and those interested in the field. Prerequisite: 387-110. F-W

387-215 Sociology of the Family 3 Cr. The family as an institution; history, variations in other cultures, relationships to other institutions, interactions of members at various stages of life cycle. Prerequisite: 387-110. F-W

387-225 Problems of American Society 3 Cr. Sociological perspective on problems such as mental illness, sexual deviancy, organized crime, white collar crime, violence, bureaucracy, inequality, and consumption.

387-250 Social Psychology 3 Cr. Theory and application of social interaction; emphasis on communication. Prerequisite: 387-110. W

387-275 Sociology of Sex Roles 3 Cr. Sociological analysis of social roles played by the sexes. Prerequisite: 387-110. W

387-420 Child and Family Agencies 2 Cr. Social and legal status of children in American society; various social services designed to optimize child's growth and development; nature and needs of families; family service agencies. F-W

387-430 Social Casework Methods 3 Cr. Dynamics of social casework: mobilizing individual capacities and community resources to promote adjustment between client and environment; social change. Prerequisite: 387-205.

387-515 Criminology 3 Cr. Sociological analysis of structure and function of criminal law, variables of criminal behavior and operation of criminal justice system. Prerequisite: 387-110. W

387-525 Sociology of Leisure 3 Cr. Institutional approach to effects of leisure on social structure; values reflected in leisure; problems with increase in leisure resources. Prerequisite: 387-110. W

387-530 Sociology of the Community 3 Cr. Community structure, chiefly in U.S.; variability and current trends, research techniques, community development. Prerequisite: 387-110. F-W

387-540 Sociology of Work 3 Cr. Human behavior in various types of employment and occupations; trends in U.S. occupational structure. Prerequisite: 387-110. F-W

387-550 Sociology of Technology 3 Cr. Relationships between technology and social structure with emphasis on future projections. Prerequisite: 387-110. F-W-S

387-560 Sociology of Juvenile Delinquency 3 Cr. Definitions of and trends in deviant behavior among youth; research findings; efforts in prevention, control and treatment. Prerequisite: 387-110. F-W

387-575 Sociology of Minority Groups 3 Cr. Social/psychological aspects of interaction between majority and minority groups; trends among minorities in U.S. Prerequisite: 387-110. W

SPEECH

391-100 Fundamentals of Speech 2 Cr. Techniques of effective speech: diagnosis of individual needs and training in necessary skills; speaker/listener relations, speech organization, voice, bodily action, language and development of confidence and poise. F-W-S

391-101 Forensics 1-2 Cr. Training in speech through participation in intercollegiate forensics: oral interpretation and original and limited-preparation events. Repeatable for credit. F-W

391-102 Forensics 1-2 Cr. Training in speech through participation in intercollegiate forensics: oral interpretation and original and limited-preparation events. Repeatable for credit. F-W

391-103 Forensics 1-2 Cr. Training in speech through participation in intercollegiate forensics: oral interpretation and original and limited-preparation events. Repeatable for credit. F-W

391-104 Forensics 1-2 Cr. Training in speech through participation in intercollegiate forensics; experience in forensics administration. Repeatable for credit. F-W

391-110 Speech for International Students 1 Cr. Practical experience in communications in various situations; individual and group speaking and listening through use of phonetics and videotaped speech presentations. Length of course varies with individual progress. F-W

391-121 Radio Practicum—Advanced Program Participation 1 Cr. Advanced program participation at university radio station WVSS. F-W

391-122 Radio Practicum—Program Production 1 Cr. Participation in program production at university radio station WVSS. F-W

391-123 Radio Practicum—Engineering 1 Cr. Participation as recording, maintenance and/or repair engineer at university radio station WVSS. F-W

391-124 Radio Practicum—News/Sports 1 Cr. Participation in news/sports pro-

grams at university radio station WVSS. F-W

391-125 Radio Practicum—Management 1 Cr. Participation in 1 of 12 management positions at university radio station WVSS. F-W

391-131 Theater Practicum .5-1.0 Cr. Participation in acting, stagecraft, lights, sound, makeup, costumes, properties and business in university theater productions. Repeatable for credit. F-W

391-200 Persuasive Speaking 2 Cr. Advanced techniques of speaking; develop skill in audience analysis, speech composition and delivery of various types of speeches; recognize techniques used daily toward individuals and groups. Prerequisite: 391-100. F-W-S

391-202 Oral Interpretation 2 Cr. Individual and group activities to develop skill in the oral performance of literature; projects in analysis and delivery of literature. Consideration of individual problems. Prerequisite: 391-100. W

391-204 Techniques of Group Leadership 2 Cr. Techniques for presiding at meetings through use of parliamentary law; persuasion as means of motivating and guiding behavior of others. Prerequisite: 391-100. F-W

391-206 Discussion 2 Cr. Principles and techniques of discussion; leading and participating in symposium, panel, roundtable and other discussion forms. Prerequisite: 391-100. F-W

391-208 Theory of Communication 3 Cr. How people communicate with each other; interpersonal, social, technical and business communication, monographs of various communication theorists. Prerequisite: 391-100. F-W

391-210 Interpersonal Speech Communication 1-2 Cr. Basic aspects of non-structured, informal speech communication; expression of feelings and intentions and processing of relationships. Prerequisite: 391-100. F-W

391-232 Introduction to the Theater 3 Cr. Development of theater arts from ancient times to present; play styles, production methods and audience appreciation; representative plays. F-W

391-236 Listening 2 Cr. Theoretical analysis and practical application of listening concepts. Emphasis on assessment of individual listening skills and methods of improving personal listening techniques used in occupational and personal relationships. Prerequisite: 391-100.

391-244 Radio Programming and Production 3 Cr. Planning, writing and producing various types of on-the-air experiences. Programs may be broadcast from university radio station. Prerequisite: 391-100. F-W

391-310 Introduction to Speech Correction 2 Cr. Nature and causes of and therapeutic methods for remediating speech and language disorders. Prerequisite: 391-100. W

391-334 Contemporary Theater 2 Cr. Analysis of selected plays; structure, dramatic content and production methods. Prerequisite: 391-100. W

391-336 Stagecraft and Scene Design 2 Cr. Technical problems in producing plays; set design; constructing, painting and handling scenery; stage lighting, makeup, costuming, sound and visual effects, organization of production staff. Prerequisite: 391-100. W

391-338 Play Production 2 Cr. Directing and acting techniques in play production; selecting, rehearsing and producing scenes for class. Prerequisite: 391-100. F

391-508 Speech Skills for Business and Industry 2 Cr. Technical speaking; projects in application of speech skills and activities in business and industry. Prerequisites: 391-100 and junior standing. F-W-S

391-512 Speech Skills for Educators 2 Cr. Application of leadership techniques and speech skills in classroom and educational activities; two-way communication as aspect of classroom climate. Prerequisites: 391-100 and junior standing. F-W-S

391-514 Interviewing 1 Cr. Principles and techniques for interviewee in employment interviews. Prerequisite: 391-100. F-W

391-554 Television Programming and Performance 3 Cr. Planning, writing and performing instructional, public service, special feature or dramatic television programs. Prerequisites: 391-100 and junior standing or consent of instructor. F-W

EDUCATION AND HUMAN SERVICES

COUNSELING AND PERSONNEL SERVICES

413-405 Peer Counseling 3 Cr. Laboratory experience will train class participants to be peer counselors and trainees for peer groups that counsel among themselves using skills in listening, giving support and providing alternatives through verbal and non-verbal interaction. F-W

413-444 Introduction to Group Processes 2 Cr. Principles of group processes and the appropriateness of their application in various settings.

413-501 Introduction to Guidance 2 Cr. Policies and practices of organized guidance programs in educational settings; historical, philosophical and cultural bases for guidance services; guidance techniques for teachers; cooperative efforts of teachers, parents and counselors. F-W-S

413-510 Early Childhood Assessment 3 Cr. Theory and techniques of assessing child development (birth through 8 years) in cognitive, psychomotor and socioemotional areas.

413-571 The Psychology of Marriage and the Family 2 Cr. A study of the interpersonal relations involved in dating, mating, and family collaboration with growing awareness of patterns for self-integration. F-W

413-600 Workshop—Counseling/Psychological Services 1-3 Cr. Current specialized topics studied through experiential activities. Prerequisite: consent of instructor. Repeatable for credit.

413-629 Guidance in the Elementary School 2 Cr. Nature and conditions of guidance in elementary schools; curricular and non-curricular guidance techniques, referrals, parent counseling; guidance principles and practices applied to elementary school child. F-S

413-647 Behavior Problems of Children 2 Cr. Psychological, social and environmental factors contributing to developing child's behavior; cause and treatment of behavioral disorders in children 3 through 12; methods of observing, diagnosing, documenting and interpreting; underlying behavioral dynamics of problem children. Prerequisite: consent of instructor. W-S

413-650 Behavior Problems of Adolescents 2 Cr. Behavior problems of contemporary American adolescents; identification, etiology, intervention and prevention; guidance techniques and processes for teachers, counselors, school psychologists, social service and child care workers, and parents. W-S

413-666 Alcoholism and Family Systems Intervention 2 Cr. The role of alcoholism in the family and how to intervene therapeutically. F-S

413-675 Counseling Theory 2 Cr. Theoretical approaches to counseling: psychoanalytic adaptations, behaviorism, trait-factor, client-centered and others; nature of man, underlying personality theory, goals of counseling, role of counselor and illustrative practical applications in each approach; develop beginning personal theory of counseling. Prerequisite: 413-501. F-W-S

413-694 Counseling Older Persons 2-3 Cr. Training service providers in counseling skills and gerontology through discussion, observation and supervised counseling experiences. S

EDUCATION

421-205 Human Relations for the Helping Professions 2 Cr. An experiential seminar aimed at the improvement of human interaction and the human condition through the development of communication and behavioral skills. F-W

421-280 Reading Improvement 1-2 Cr. Skill instruction in reading study skills. Application of skills to student's textbooks and materials. F-W

421-303 Educational Psychology 2 Cr. Introduction to the psychological aspects of the educative processes. Emphasis on application of basic psychological principles to teaching. Focus on learner, learning process, and the teacher as an agent for change. Prerequisite: 479-110. F-W-S

421-305 Teaching Practicum 2 Cr. Practical experience in developing the prospective teacher's ability in specific well defined teaching skills. Prerequisite: 421-205. F-W-S

421-326 Foundations of Education 2 Cr. Historical background, status, trends, and organization of U.S. education; understandings vital to students before they begin student teaching. Includes professional roles, expectations, rewards and frustrations, resources, control, finance and philosophy.

421-405 Student Teaching 8 Cr. Experience in applying the theories and skills involved in teaching and learning under the guidance of a master teacher in selected off-campus schools. Prerequisites: 421-205, 421-305, 421-536, 421-538, 421-540, 421-641; overall GPA of 2.25; satisfactory Health, Speech and English. F-W

421-406 Intern Teaching 8 Cr. An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisites: 421-205, 421-305, 421-536, 421-538, 421-540, 421-641; overall GPA of 2.25; satisfactory Health, Speech and English. F-W

421-422 Principles of Secondary Education 2 Cr. The evolution, status, and trends of secondary education. Needs of our democratic society; philosophy, organizational problems, curriculum development, and the responsibilities of the individual teacher as related to students before they begin student teaching. Prerequisite: 479-110. F-W-S

421-438 Curriculum Development 2 Cr. Intensive study and practice of the procedures involved in course construction culminating in a course of study appropriate to the student's major or minor. W-S

421-440 Management of the Learning Environment 2 Cr. Alternative practices and procedures involved in the effective management of the learning environment. Prerequisites: 421-205, 421-538. W-S

421-495 Personal Learning Experience 2 Cr. An experimental program for juniors and seniors. By permission of program directors. Each student selects an area of life which involves ethical decision and investigates that decision-making process. The group enrolled for this experience meets with the directors twice a week for direction, discussion, and criticism. Self-evaluation paper at the close of the course, which is submitted to the critique of the directors and other members of the learning experience. F-W

421-522 Secondary Education Seminar 2 Cr. For post-student teaching, discussion of the evaluation, status, and trends of secondary education. The experiences of the students' teaching related to the needs of our democratic society; philosophy, organization, problems, curriculum development, and the responsibilities of the individual teacher.

421-536 Working With the Culturally Different 2 Cr. Intensive study and practical experience in working with the culturally different. Prerequisite: 421-205. F-W

421-590 Mental Health in the Schools 2 Cr. A study of the total school community in terms of factors and dynamics contributing to the development or hindrance of the mental health of students, staff, ad-

ministration, parents. Prerequisite: junior or senior standing.

421-600 Workshop—Special Topics in Education 1-3 Cr. Current specialized topics studied through experimental activities. Prerequisite: consent of instructor. Repeatable for credit.

421-641 Education Evaluation 2 Cr. Testing, the interpretation of tests by means of simple statistical procedures; methods of evaluating educational programs. W-S

421-682 Reading Methods—Secondary School 2 Cr. Technical information on the reading process, self-concept and reading and specific classroom reading problems. Construction of directed reading activities, informal reading inventories, reading study guides, readability checks, SQ32 study skills, vocabulary development and comprehension materials. Prerequisite: junior or senior standing consent of instructor. F-W-S

421-683 Seminar in Reading Methods for Secondary Schools 1 Cr. Selection, research and presentation for discussion of topics related to reading in secondary schools. Prerequisite: 421-682. W

421-685 Psychology of Adult Education 2 Cr. A global view of the philosophy, purpose and practice in various programs of adult education, and an examination of the characteristics of the adult learner plus a profile of his ego, intelligence, and development.

421-690 Learning Style Theory and Application 2 Cr. An introduction to the educational sciences, including cognitive mapping. Emphasis is placed on the practical application of the educational sciences in an educational setting. Prerequisite: junior standing.

SPECIAL EDUCATION

431-480 Student Teaching With Handicapped Youth 8 Cr. Directed teaching and community experiences in selected off-campus schools with normal and handicapped adolescents. Prerequisites: 431-661 and 431-662, 2.5 GPA in major courses "C" or better in English and speech health certification. F-W

431-501 Learning Disabilities 3 Cr. Identification, remediation and evaluation of learning disabled; intervention techniques used with adolescents and adults. W

431-532 Psychology of the Exceptional Child 2-3 Cr. History and treatment of exceptional individuals; characteristics and development of children who deviate from the norm: learning disabled, gifted, mentally retarded, socially and emotionally disturbed, abused, speech and language impaired, and those with visual, hearing, orthopedic and chronic health problems. F-W

431-555 Issues in Special Education 2 Cr. Current and controversial issues in special education. Prerequisite: 431-532. F

431-559 Curriculum for the Retarded 2 Cr. Program planning for secondary special education (MR) with specific scope and sequence, learning activities, and evaluation techniques for language arts, math, social sciences and science. To be taken concurrently with 431-560. F-W

431-560 Special Education Methods and Materials 2 Cr. Design, development and content of curriculum for secondary educable mentally retarded (EMR) students; materials and methods of presentation. To be taken concurrently with 431-559. F-W

431-561 Prescriptive Diagnostic Teaching 3 Cr. Develop skills for diagnosis and intervention of behavior and learning problems of the handicapped. Development of and IEP (Individual Education Plan) for handicapped students. To be taken concurrently with 431-562. Prerequisite: consent of instructor. F-W-S

431-562 Clinical Experience With the Handicapped 2 Cr. Tutor a handicapped individual in an on-campus or educational setting. To be taken concurrently with 431-561. Repeatable for credit. F-W-S

431-565 Academic Instruction for Mentally Retarded 2 Cr. Techniques and approaches for teaching basic and functional academics to EMR students. Prerequisites: 431-559 and 431-560. F

431-581 Legal Rights of Handicapped 2 Cr. Current litigation, civil commitment, criminal proceedings, federal and state statutes, and civil rights regarding the handicapped student and adult. Prerequisite: 431-532. F-W

431-585 Introduction to Mental Retardation 2 Cr. Introduction to etiology of mental retardation; psychological, educational, social and vocational aspects; adjustment techniques used in working with mentally retarded persons. F-W

431-595 The Gifted Student 2 Cr. Characteristics of gifted, creative and talented individuals; identification in educational settings; social, psychological and educational aspects of providing for the gifted throughout school years.

431-600 Workshop: Topics in Special Education 1-3 Cr. Current specialized topics studied through experiential activities. Prerequisite: approval of instructor F-W-S

431-630 Mainstreaming Special Students 3 Cr. Learning characteristics and behavior of mentally retarded, learning disabled, socially and emotionally disturbed, hearing and sight impaired, orthopedically and chronic health impaired, speech and language impaired students; services

mandated by PL94-142, M-team process, and individualized educational plan; instruction of handicapped within regular classes. F-W-S

431-660 Practicum in Special Education 2 Cr. Off-campus work and study in educational settings with handicapped youth. To be taken concurrently with 431-661. Prerequisite: consent of instructor. Repeatable for credit. F-W

431-661 Career Education for Handicapped Youth 3 Cr. Techniques for interviewing, planning and directing school programs in career choice for handicapped adolescents; class activities in community job surveys, work placement and work supervision. To be taken concurrently with 431-660. F-W

431-662 Classroom Management Techniques 3 Cr. Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance learning. F-W-S

VOCATIONAL REHABILITATION

459-X98 Vocational Rehabilitation Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. Prerequisite: 459-101.

459-101 Introduction to Rehabilitation 3 Cr. An introduction to serving handicapped and disadvantaged persons. Philosophy, history, legislation, concepts and processes, and careers in rehabilitation services. Special course fee.

459-102 Community Resources 3 Cr. Role of community resources in rehabilitation. Prerequisite: 459-101.

459-201 Basic Skills in Rehabilitation 2 Cr. Development of basic competencies required in most rehabilitation specialties: interviewing, behavioral observation, developing case files, utilizing media materials, report writing, and utilizing occupational information. Special course fee. Prerequisites: 459-101 and 459-202.

459-205 Rehabilitation Practicum 4 Cr. Direct experience working with handicapped clients and members of the helping professions in rehabilitation settings. Prerequisite: 459-201.

459-310 Vocational Evaluation 4 Cr. Vocational evaluation methods: work samples, psychometric testing, situational assessment, techniques of job classification and report writing. Prerequisite: 459-201.

459-325 Rehabilitation of the Sensory Disabled 3 Cr. Introduction to the deaf, blind and deaf/blind; methods and techniques of sensory disability rehabilitation. Prerequisite: 459-201.

459-330 Psycho-social Aspects of Disabilities 3 Cr. Nature, etiology and methods of dealing with problems of the physically and emotionally handicapped. Special course fee. Prerequisites: 308-220, 459-201 and 479-561.

459-401 Principles and Techniques of Case Load Management 2 Cr. Principles and techniques of implementing case load management in service of clients of state vocational rehabilitation counseling agencies or rehabilitation facilities. Prerequisite: 459-330.

459-402 Rehabilitation Facilities Operation 3 Cr. Principles and practices in rehabilitation facilities operation; knowledge of laws, volunteer programs, budgeting practices and determination of program effectiveness. Prerequisite: 459-201.

459-410 Placement Processes With the Handicapped 3 Cr. Theory and methods of placement techniques for handicapped individuals. Prerequisite: 459-201.

459-413 Vocational Evaluation Seminar 2 Cr. Methods of determining community resources that meet training and job placement needs of rehabilitation client; analyzing jobs in order to develop tools for evaluating rehabilitation client's potential for local training and job placement. Prerequisites: 459-310 and 459-610 or consent of instructor.

459-505 Sign Language I 3 Cr. Basic course in manual communication with the deaf. Intensive practice in expressive and receptive communication. Prerequisite: 459-201 or graduate standing. F

459-506 Sign Language II 3 Cr. Intermediate course in manual communication with the deaf; American Sign Language; increase sign vocabulary and communication speed. Prerequisite: 459-505. W

459-509 Introduction to Biofeedback 3 Cr. Theory and applications of biofeedback in psychology, rehabilitation, medicine and education; in-depth review of the field; appropriate uses of biofeedback as a referral possibility; preparation for supervised clinical biofeedback experience. Prerequisites: 308-132 and 479-110. F

459-510 Clinical Biofeedback Laboratory 3 Cr. Development of clinical skills and familiarization with laboratory monitoring devices and stress management techniques, as they apply to the training of clients in a clinical biofeedback setting. The course also reviews current clinical research, future directions for the field, and ethical considerations. Prerequisites: 308-220, 413-405, 459-509 and consent of instructor. W

459-520 Rehabilitation of the Chemically Dependent 3 Cr. Background in the field of chemical dependency with emphasis on

the rehabilitation aspects of the chemically dependent and knowledge of the historical and sociological implications of drug usage. Prerequisites: 459-201 and junior or graduate standing. F-W

459-525 Rehabilitation of the Public Offender 3 Cr. The field of corrections as it concerns the individual and criminal justice institutions; basic legal terms, laws, types of institutions and treatment modalities; treatment effectiveness and trends in criminal justice field. Prerequisites: 459-201 and 479-561 or graduate standing. F-W

459-550 Independent Living 2 Cr. An overview of independent living programs in this country including evolution, goals, methods of service delivery, and program management of ILP. F-W

459-560 Technological Applications: Rehabilitation Services 2 Cr. Applications of technology to assist persons with disabilities in vocational and independent living situations using rehabilitation engineering principles/processes. Review of commercially available aids and assistive devices, and alternative control/interfacing procedures. Introduction to problem solving/design process as related to persons with disabilities.

459-565 Laboratory in Rehabilitation Technology 2 Cr. Experience utilizing technological aids/devices developed for persons with disabilities. Modify/adapt equipment to meet specific functional requirements. Construct switch/control mechanisms for equipment. Develop prototype solutions to vocational and independent living problems. Prerequisites: 459-560, 170-202, 170-202 or equivalent, or consent of instructor. F-W-S

459-585 Rehabilitation of the Mentally Retarded 2 Cr. Background in mental retardation; vocational evaluation, adult education and adjustment techniques used with mentally retarded adults. Prerequisite: 459-201 or graduate standing. F-W-S

459-587 Handicapped Workers in Business and Industry 3 Cr. Orientation to handicapped workers in business and industry. Focus is upon the elimination of attitudinal and environmental barriers as they pertain to hiring, productivity, and retention of handicapped workers. Emphasis upon governmental requirements for conformance, linkage between business and rehabilitation, community resources, and staff development. Prerequisite: junior, senior or graduate standing. W

459-601 Rehabilitation in the Private Sector 2 Cr. Introduction to the private-for-profit sector of rehabilitation. Orientation to the contractual services offered by practitioners. Industrial in-plant models will be contrasted to other models for providing rehabilitation services to disabled workers. F-W

459-605 Microcomputer Application for the Handicapped 2 Cr. Use of microcomputer hardware and software to facilitate the development of functional skills of the handicapped. W

459-610 Psychological Testing With Handicapped People 2 Cr. Introduction to psychometric tests; administration, interpretation/scoring and application to handicapped populations. F-W-S

459-670 Work Adjustment Services 3 Cr. Principles and procedures of adjustment services. Emphasis upon the change and improvement of behavior. Supervised practical experience in interviewing, behavior observation, individual work adjustment planning, lesson plan development and report writing. Prerequisites: 459-101, 459-201, Or permission of instructor. F-W-S

459-680 Principles of Rehabilitation Counseling 3 Cr. Theory and application of counseling processes in rehabilitation settings. Prerequisites: 413-675 and 479-561. F-W-S

459-682 Sexuality and the Disabled 2 Cr. Programs in sexuality, terms and techniques, exploration of personal biases and development of techniques for dealing with sexuality of disabled individuals. Prerequisites: 459-330, 459-680 or graduate standing. F-W

459-685 Group Processes in Rehabilitation Settings 2 Cr. Theory and application of group processes in rehabilitation settings; direct experience as member and facilitator of a group. Prerequisite: 459-680 (undergraduate) 459-761 (graduate) F-W-S

459-688 Advanced Job Placement 2 Cr. Job placement methods for individuals with handicaps. Development of Employer Account Systems and the marketing of job placement services. Use of Job Readiness Scales, development of individualized placement plans, and Job Seeking Skills training programs. Current literature and research in job placement will be assigned and discussed. Prerequisite: 459-410 or permission of instructor F-W-S

PSYCHOLOGY

479-X98 Psychology Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.

479-100 Psychology Seminar I—Foundations 1 Cr. An orientation activity for all students in their initial semester as a psychology program student. Information concerning psychology as a discipline, applied profession, and liberal arts program is presented. Career and graduate training opportunities are reviewed. Students con-

tinue enrollment in the seminar until they have completed 479-100, 120, 150 and 190 and gained approval for their individual program plan.

479-110 General Psychology 3 Cr. An introduction to psychology as a discipline and applied science. Emphasis is placed on scientific methodology as it is applied to behavior, learning, memory, perception, motivation, development, individual differences, mental health, the physiological basis for behavior, and on the application of psychological principles to human experience. F-W-S

479-120 Psychology—Its History and Systems 3 Cr. Comprehensive survey of history of psychology and basic systems that have developed into modern American psychology. Treatment is given both to philosophic development of psychology and to evolution of psychology as a behavioral science. Emphasis on development of psychology in the 19th and 20th centuries in western Europe and the U.S. with the schools of thought: Structuralism, Functionalism, Behaviorism, Gestalt Psychology, and Dynamic Psychology receiving primary consideration. State of modern psychology is considered; contributions of contemporary psychologists examined. W

479-150 Humanistic Psychology 3 Cr. The course will address the question of "Who am I?" from a contemporary horizon where concerns of psychology intersect biology, philosophy, sociology, anthropology, history and religion. From there we move toward possible answers to man's perennial questions about himself and his future through readings and discussions of key works. The overall objective of the course will be to help the student construct, for himself, a viable answer to the classical question, "Why am I?". F-W

479-190 Psychological Methods I 3 Cr. This course introduces the student to research in the behavioral sciences. Observational, clinical, historical, correlational, descriptive, and experimental techniques are introduced and evaluated. Through the study of contemporary psychological research, the student gains evaluative principles which will enable him to be an intelligent research consumer. F-W

479-251 Child Psychology 3 Cr. A study of the total psychological development of children emphasizing age groups spanning the pre-school and pre-pubescent child and methods for scientific measurement and understanding of child behavior. Prerequisite: 479-110. F-W-S

479-281 Environmental Psychology 3 Cr. Psychological aspects of person/environment interaction. People impacts on environment, and environmental impacts on people. Aspects of recreational environ-

ment, population density and stress factors. Prerequisite: 308-122 or 308-150. W

479-300 Psychology Seminar II 1 Cr. The second level of seminar for psychology program students. Activities center on sharing knowledge and experience among faculty and students and on an assessment of the development of program level competencies by students. Prerequisite: 479-100. F-W-S

479-390 Experimental Psychology 3 Cr. This course serves as an introduction to the methodology and content of experimental psychology. This course is built around the concept of behavioral objectives which are used for guiding the learning process, and evaluating that process. Upon successful completion of this course, the student will be capable of formulating a psychological problem, designing an experiment to investigate this problem, planning all aspects of the experimental process, conducting a well run experiment, analyzing and interpreting results and evaluating the experiment. Prerequisite: 354-130. W

479-400 Psychology Seminar III 1 Cr. The final seminar for psychology program students. Attention is given to the transition to graduate school and/or employment by students. Students develop and conduct an original investigation and report their findings in a formal research paper as a demonstration of their achievement of program competencies. Prerequisite: 479-300. F-W-S

479-451 Children's Learning 3 Cr. Psychological study of basic learning processes in infants and young children. How and why learning occurs and how the course of learning can be modified; discussed from theoretical, research, and practical orientations including simple behavioral responses, concepts and language. Prerequisites: 212-124 and 479-110. F

479-460 Personality and Mental Health 3 Cr. An introduction to the areas of psychology which are concerned with the recognition of the positive principles of mental health and their application to human behavior. In addition, an examination is made of a variety of theories which are representative of the major views of leading thinkers on the subject of personality and personality development. F

479-483 Human Resource Development 2 Cr. Foundation of human resource selection and development in the business and industrial setting. The sub set of personnel management concerned with staffing, orientation, appraisal, development, counseling, and compensating employees constitute the major topics of study. Prerequisites: 479-110 or 479-150 and 150-150. F-W

479-484 Introduction to Behavior Modification 2 Cr. An introduction to the applied analysis of behavior. Emphasis is placed on the fundamentals of behavior modification, models of behavior control, and applications in a variety of settings. Prerequisites: junior standing and at least 3 psychology courses or consent of instructor. W-S

479-530 Psychology of Learning 3 Cr. A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized. F

479-535 Motivation and Emotion 3 Cr. An experimentally oriented introduction to the fundamental principles of motivation and emotion. Prerequisites: 479-110, junior standing and 9 or more credit hours in psychology consent of instructor. W

479-540 Psychology of Individual and Group Differences 3 Cr. Nature and extent of differences in individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied.

479-552 Adolescent Psychology 3 Cr. The physical, emotional, social, moral, and intellectual development of secondary school youth. Prerequisite: 479-110. F-W-S

479-561 Abnormal Psychology 3 Cr. A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied. F-W-S

479-570 Assertive Training Procedures 2 Cr. Training in interpersonal behavior and communications in which persons learn to defend their legitimate rights without violating the rights of others. F-W-S

479-574 Psychology of Women 2 Cr. The myths and stereotypes of early psychoanalytic view of women, critical issues and events of female experience, from prenatal through adulthood; meaning of sexuality, contemporary life styles, and the meaning of aging. Prerequisite: 479-110. F

479-579 Public Relations 2 Cr. Introduction to public relations in industry and education including community relations, employee relations, customer relations, media relations, tools of public relations, two-way communications, and special publics. F-W-S

479-581 Industrial Psychology 2 Cr. A survey of the application of psychological

principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology. Prerequisite: 479-110. F-W

479-582 Human Resource Management 3 Cr. Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation. F-W-S

479-601 Workshop—Special Topics in Psychology 1-3 Cr. Current specialized topics studied in a small group setting utilizing experimental activities. Prerequisite: consent of instructor. Repeatable for credit.

479-602 Position and Salary Evaluation 2 Cr. The determination of wages and salaries for differing jobs and positions. Legal issues of equal pay for comparable worth. F-W-S

479-632 Perception 3 Cr. This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical tech-

niques and conduct experimentation in human information processing. F-W

479-673 Psychology of Stress 2 Cr. Nature of stress and stress-related diseases, stress in daily life, techniques for managing stress, and plans for reducing stress in personal and professional life.

479-679 Advanced Public Relations 2 Cr. Practice in planning and directing specific public relations programs, using the case problem approach. Prerequisite: 479-579 or consent of instructor

479-690 Psychological Measurement 3 Cr. An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability, and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions. W

489-601 Brazelton Neonatal Behavioral Assessment 2 Cr. Philosophy and technique of using the Brazelton Neonatal Behavioral Assessment Scale for evaluating infant personality and development. Prerequisite: Instructor permission F-W-S

TRANSDISCIPLINARY

500-100 Applied Student Leadership 2 Cr. Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. F-W

500-100A Applied Student Leadership .5 Cr. Applied leadership techniques in interpersonal communications and orga-

nizational dynamics developed through classroom experience and practice. Not open to those who have completed 500-100.

500-100B Applied Student Leadership .5 Cr. Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. Not open to those who have completed 500-100.

500-100C Applied Student Leadership .5 Cr. Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. Not open to those who have completed 500-100.

500-100D Applied Student Leadership .5 Cr. Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. Not open to those who have completed 500-100.

500-477 International Studies 1-8 Cr. Interinstitutional Credit Exchange. Students complete educational experiences at recognized/accredited International institutions. The course may be repeated in a given semester or in other semesters. Enrollment is by permission of the Director of International Programs. Prerequisites: sophomore standing, Good standing academically (i.e. 2.00 GPA or more) permission of the Director of International Studies.



LEARNING RESOURCES

MEDIA TECHNOLOGY

600-504 Elementary Photography 2 Cr. Fundamentals of photography: aesthetics, basic theory, camera operation, film selection, lighting, roll-film processing, contact printing, enlarging and print finishing. Student must provide own camera. F-W-S

600-535 Film—History and Appreciation 3 Cr. Evolution of motion picture film as medium of mass communication and aesthetic expression; contributions of noted film producers. F

600-540 TV—Appreciation and Criticism 2 Cr. Analysis of major TV program types; positive and negative contributions of TV; commercials; children's programming; TV viewing diary; development of TV Action Plan. W

600-560 Audiovisual Communications 2 Cr. Methods of evaluating and using audiovisual materials effectively; experience in operating equipment; basic techniques of media preparation. F-W-S

600-561 Preparation of Audiovisual Materials 2 Cr. Planning, designing and producing instructional and presentation materials. Prerequisite: 600-560. F-W-S

600-570 Introduction to Computer-Assisted Instruction 2 Cr. Application of computers to training and instruction. Theory and design of instructional material for presentation by the computer. Course-

ware development tools and their use. Prerequisite: consent of instructor or curriculum course. S

600-573 Educational Television Utilization 1 Cr. Effective use and evaluation of telelessons in teaching; operation of TV receiving and distribution equipment; curriculum considerations for integrating ETV programming into classroom instruction. SE

600-580 Microcomputer Applications—Words/Data 2 Cr. Applications of specific commercial microcomputer programs for personal, professional, and student use. Emphasis on word processing, numerical and file management programs. W-S

600-605 Advanced Photography 2 Cr. Advanced monochromatic photography: aesthetics, advanced theory, view-camera techniques, studio lighting, materials and equipment selection, sheet-film processing, specialized processes and techniques. Prerequisite: 600-504. F-W-S

600-615 Micrographics Fundamentals 1 Cr. Fundamentals of microform production and use; descriptions and production of microformats, COM, color microfiche, storage and retrieval concepts, micropublishing, acquisitions, management and legal aspects of microforms. F-SE

600-630 Audio/Film/TV Production Fundamentals 3 Cr. Instructional film, audiotape and videotape production fundamentals. For media technology majors; not open to those taking 391-554. F-S

600-640 Telecommunication Systems and Teleconferencing 2 Cr. Interactive teleconferencing techniques. Applications, effective utilization and cost-effectiveness of information distribution systems, including telephone, television, teletext, videotext, viewdata, cable TV, slow-scan TV, and computers. Survey of transmission systems, including telephone lines, satellites, coaxial cable, microwave and fiber optics. F-W-S

600-645 Color Photography 2 Cr. Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing. Prerequisite: 600-504. F-W-S

600-655 Slide/Tape and Multi-Image Production 2 Cr. Practical experience in planning, producing, and presenting media productions for instruction/training. Advanced applications of photography, audio, video, and programming related to slide/tape and multi-image presentations. Prerequisites: 600-560 and 600-630. W



FACULTY, ACADEMIC STAFF AND EMERITI

Chancellor's Office

Robert S. Swanson, 1950, Professor and Chancellor, Ph.D., University of Minnesota

Office of University Relations

Charles L. Buelow, 1968, Director, B.A., University of Wisconsin-Milwaukee
John K. Enger, 1969, Associate Director and Coordinator of News Service, B.S., University of Wisconsin-Eau Claire
Donald Steffen, 1981, University Editor, B.S., University of Wisconsin-Stout

Foundation and Alumni Services

David K. Williams, 1981, Director, M.A., University of Wisconsin-Madison
Patricia A. Reisinger, 1982, Assistant Director, M.S., University of Wisconsin-Stout

Academic Affairs Division

Wesley L. Face, 1957, Professor and Vice Chancellor, Ed.D., University of Illinois

Earl W. Gierke, 1962, Professor and Assistant Vice Chancellor, Ph.D., University of Minnesota

Nelva G. Runnalls, 1966, Professor and Dean for Curriculum, Research and Graduate Studies, Ph.D., University of Missouri

Lawrence S. Wright, 1967, Professor and Director, Graduate Admissions; and Assistant Dean for Graduate Studies and Curriculum, Ed.D., University of Missouri

Jerry M. Anderson, 1982, Assistant Dean for Research, Ph.D., Michigan State University

Raymond M. Szymanski, 1968, Professor and Coordinator of Research, M.A., University of Minnesota

Jeanette Daines, 1975, Program Administrator for Office of Educational Strategy Development, M.S., University of Wisconsin-Stout.

Connie Jones, 1985, Specialist and Administrative Associate, B.A., University of Wisconsin-Eau Claire.

John Van Osdale, 1968, Associate Professor, Director of Continuing Education and Director of the Summer Session, M.S., Bradley University

Karen I. Adsit, 1985, Specialist, Office of Continuing Education and Summer Session, M.A., University of Nebraska.

V. Susan Foxwell, 1978, Specialist, Office of Continuing Education and Summer Session, M.S., University of Wisconsin-Stout.

Robert S. Karrow, 1974, Specialist, Office of Continuing Education and Summer Session, B.A., University of Wisconsin-Madison.

Janet E. Roehl, 1981, Specialist, Continuing Education, Ph.D., Arizona State University

John B. Stevenson, 1966, Professor and Director of International Programs, Ph.D., The Ohio State University

Ellen D. Lanahan, 1983, International Student Coordinator/Advisor, M.A., The Florida State University

School of Industry and Technology

M. James Bensen, 1966, Professor and Dean, D.Ed., The Pennsylvania State University

Donald G. Chatman, 1982, Associate Professor and Associate Dean, Ed.D., Northern Illinois University

John F. Entorf, 1967, Professor, Associate Dean and Director of Center of Innovation and Development, Ed.D., Texas A & M University

Dorothy Dale, 1975, Director of Cooperative Education Program, Ed.S., University of Wisconsin-Stout

Energy and Transportation

Thomas R. Baldwin, 1970, Professor and Department Chair, Ed.D., Texas A & M University

Jonas Amoapim, 1982, Associate Professor, Ph.D., Oregon State University

James A. Collier, 1965, Professor, Ed.D., Texas A & M University

Rabee Koudmani, 1984, Lecturer, Polytechnic Institute of New York

Don E. Olson, 1982, Associate Professor, Ph.D., University of Wisconsin-Stout

Joe A. Rinck, 1968, Professor, Ed.D., Colorado State College

Jack B. Sampson, 1957, Professor, Ed.D., University of North Dakota

Robert Spinti, 1957, Professor, Ed.D., University of Missouri

Graphic Communication

William D. Amthor, 1960, Professor and Department Chair, Ed.D., Texas A & M University

William A. Bear, 1984, Specialist, M.S., University of Wisconsin-Stout.

Gary Cowles, 1975, Specialist & Lecturer, B.S., University of Wisconsin-Stout

Robert W. Hendricks, 1982, Assistant Professor, M.S., University of Wisconsin-Stout

James F. Herr, 1965, Professor, Ed.D., University of Missouri

Daniel G. Malenke, 1977, Assistant Professor, M.S., University of Wisconsin-Stout

Louis A. Moegenburg, 1967, Professor, Ed.D., Texas A & M University

Courtney W. Nystuen, 1967, Assistant Professor, B. Arch., University of Minnesota

Scott Simenson, 1983, Lecturer, M.S., University of Wisconsin-Stout

Leonard F. Sterry, 1978, Professor, Ph.D., University of Wisconsin-Madison

James Tenorio, 1975, Assistant Professor, M.S., Rochester Institute of Technology

Hans Timper, 1967, Professor, Ed.D., Utah State University

Thomas J. Vanderloop, 1981, Assistant Professor, Ed.S., University of Wisconsin-Stout

John G. Vranak, 1979, Lecturer, M.S., University of Wisconsin-Stout

Industrial Management

Jerry W. Coomer, 1971, Professor and Department Chair, Ph.D., Purdue University

Kenneth Applehans, 1983, Lecturer, M.S., University of Wisconsin-Stout

Mehar Arora, 1965, Professor, Ph.D., University of Minnesota

Wallace C. Carlson, Jr. 1981, Instructor, M.S., University of Wisconsin-Stout

Raymond Hansen, 1981, Professor, Ph.D., University of Wisconsin-Madison

Raymond Keil, 1968, Professor, Ph.D., Michigan State University

David G. Kraemer, 1974, Assistant Professor, M.S.Ed., Southern Illinois University

Charles T. Krueger, 1970, Associate Professor, M.S., Stout State University

Dean E. Long, 1963, Associate Professor, M.S., Bradley University

Orville Nelson, 1963, Professor, Ph.D., University of Minnesota
 John H. Olson, 1974, Professor and Program Director, M.S. Degree in Safety, Ph.D., University of Minnesota
 James J. Runnalls, 1966, Professor, Ed.D., University of Missouri
 Charles E. Smith, 1968, Associate Professor, Ph.D., Michigan State University
 Zenon T. Smolarek, 1966, Associate Professor and Program Director, M.S. Degree in Management Technology, M.S., Stout State University
 Wesley S. Sommers, 1956, Professor and Assistant Chancellor, Ph.D., University of Minnesota
 Douglas Stallsmith, 1966, Professor, Ed.D., University of Minnesota
 Willis L. Valett, 1966, Professor, Ed.D., Texas A & M University
 Leo G. Weaver, 1983, Lecturer, M.B.A., University of Chicago
 Ned A. Weckmueller, 1976, Assistant Professor and Program Director, B.S. Degree in Industrial Technology, M.S., Stout State University
 Hugh P. Williamson, Jr., 1979, Associate Professor, Ph.D., University of Missouri
 Charles Yost, 1972, Associate Professor, Ph.D., University of Minnesota

Business

Bruce E. Siebold, 1974, Professor and Department Chair, Ed.D., University of Minnesota
 Robert P. Behling, 1969, Associate Professor, M.S., University of Illinois
 Alan Curry, 1981, Instructor, M.S., University of Wisconsin-Stout
 Elaine E. Fitzgerald, 1977, Associate Professor, L.L.B., University of Wisconsin-Madison
 Jack Ganzemiller, 1962, Associate Professor and Program Director, B.S. Degree in General Business Administration, M.S., Purdue University
 Stanley A. Johnson, 1968, Associate Professor, M.B.A., Wisconsin State College at Eau Claire
 Joseph A. Maglio, 1981, Instructor, M.S., University of Wisconsin-Stout
 Wanda J. Michaelson, 1984, Lecturer, M.B.A., Mankato State University
 George A. Morrison, 1978, Assistant Professor, M.S., Marquette University
 Maureen R. Munger, 1975, Instructor, M.S., University of Wisconsin-Eau Claire
 Wayne A. Nero, 1974, Professor, Ph.D., University of Minnesota
 Timothy G. Peterson, 1978, Instructor, M.B.A., University of Wisconsin-Madison
 Dennis Vanden Bloomen, 1983, Lecturer, M.I.D.A., Monterey Institute of International Studies
 John D. Wright, 1984, Lecturer, M.A.C., Utah State University

Materials and Processes

Armand G. Hofer, 1964, Professor, and Department Chair, Ed.D., University of Missouri
 Robert A. Berkemer, 1977, Instructor, M.A., The Ohio State University
 James Bjornerud, 1964, Professor, Ph.D., University of Minnesota
 Glenn Gehring, 1965, Professor, Ed.D., University of Illinois
 Marvin M. Kufahl, 1956, Professor, Ed.D., Michigan State University
 Robert Meyer, 1983, Lecturer, M.S., University of Wisconsin-Stout
 Arthur E. Muller, 1965, Professor, Ed.D., Colorado State College
 George S. Peltier, 1966, Assistant Professor, Ed.S., University of Wisconsin-Stout
 Frank R. Pershern, 1966, Professor, Ed.D., Texas A & M University
 Arnold C. Piersall, 1960, Professor, Ed.D., Colorado State College
 Edward L. Rzepecki, 1984, Lecturer, B.S., University of Illinois
 Larry A. Schneider, 1978, Lecturer, M.S., Stout State University
 Paul Speidel, 1964, Associate Professor, M.E., Colorado Agricultural and Mechanical College
 Henry L. Thomas, 1968, Professor, Ed.D., Colorado State College

Industrial and Marketing Education

Richard Gebhart, 1965, Professor and Department Chair, Ed.D., University of Missouri
 M. James Bensen, 1966, Professor and Dean, D.Ed., The Pennsylvania State University
 Duane A. Johnson, 1966, Professor, Ed.D., University of South Dakota
 Richard Peter, 1970, Professor and Program Director, M.S. Degree in Industrial Education, Ph.D., The Ohio State University
 Neal W. Prichard, 1962, Professor and Program Director, B.S. Degree in Vocational Trade and Industrial Education; B.S. Degree in Technical Education, D.Ed., The Pennsylvania State University
 A. Gary Searle, 1976, Professor and Director, B.S. Degree in Marketing and Distributive Education, Ed.D., The University of Tennessee
 Lee H. Smalley, 1965, Professor and Co-director, Center for Future Studies, Ed.D., Michigan State University
 Dean Tabor, 1982, Lecturer, M.S., University of Wisconsin-Stout

Center for Vocational, Technical and Adult Education

Harold Halfin, 1956, Professor and Program Director, M.S. Degree in Vocational Education; Ed.S. Degree in Industrial and Vocational Education and Co-Director, Center for Vocational, Technical and Adult Education, Ed.D., University of West Virginia

Orville W. Nelson, 1963, Professor and Co-Director, Center for Vocational, Technical and Adult Education, Ph.D., University of Minnesota

School of Home Economics

J. Anthony Samenfink, 1969, Professor and Dean, Ed.D., The Florida State University
 Mary E. Thompson, 1975, Associate Dean, Ph.D., The University of Michigan
 Joy A. Jocelyn, 1966, Assistant Professor and Assistant Dean, Ph.D., University of Oregon
 Carolyn Barnhart, 1977, Assistant to Dean, M.S., University of Minnesota
 Jane Henderson, 1983, Staff Assistant, B.S., University of Wisconsin-Stout

Apparel, Textiles and Design

Jerry V. Kinnaird, 1984, Assistant Professor and Department Administrator, Ed.D., University of Arkansas
 Donna M.J. Albrecht, 1969, Associate Professor, Ph.D., University of Minnesota
 Kenneth Heintz, 1970, Professor, Ed.D., State University of New York at Buffalo
 Erma Jackle, 1968, Associate Professor, M.S., University of Idaho
 Dorothy M. Jensen, 1966, Assistant Professor, M.A., New York University
 Bonnie Kirkwood, 1964, Assistant Professor, M.A., State University of Iowa
 Wray P. Lamb, 1976, Instructor, M.S., University of Wisconsin-Stout
 Rita Mahan, 1963, Professor, Ph.D., University of Wisconsin-Madison
 Marcia Metcalf, 1968, Professor and Program Director, M.S. Degree in Clothing, Textiles and Related Art, Ph.D., The Florida State University
 Glenyce Peterson, 1968, Instructor, M.S., Stout State University
 Mary M. Welch, 1981, Assistant Professor and Program Director, B.S. Degree in Fashion Merchandising, Ph.D., University of Minnesota

Food and Nutrition

Anita Wilson, 1966, Professor and Department Administrator, Ph.D., Utah State University
 Barbara Bayard, 1984, Lecturer, M.S., University of Wisconsin-Stout
 Lorraine C. Dahlke, 1966, Professor, Ph.D., The Ohio State University
 Gladys Earl, 1973, Assistant Professor, M.S., Colorado State University
 Melissa P. Eierman, 1984, Instructor, M.S., Case Western Reserve
 Debra K. Jahner, 1984, Lecturer, M.S., North Dakota State University
 Margaret A. James, 1961, Professor, Ed.D., North Carolina State University

Lydia A. Jarosz, 1984, Assistant Professor, Ph.D., University of Minnesota
 Mercedes L. Kainski, 1967, Professor, Ph.D., University of Wisconsin-Madison
 J. Todd Ondell, 1984, Visiting Business Professor, Ed.D., Indiana University
 Anita Pershern, 1975, Lecturer, M.S., University of Wisconsin-Stout
 Judith J. Smolarek, 1980, Lecturer, M.S., University of Wisconsin-Stout
 Janice Timmer, 1982, Assistant Professor and Program Director, M.S. Degree in Food Science and Nutrition, Ph.D., The North Dakota State University
 Mary Ann Townsend, 1968, Assistant Professor, Ph.D., Texas Woman's University

Habitational Resources

Leland L. Nicholls, 1977, Professor and Department Administrator, Ph.D., The University of Tennessee
 Reed Andrae, 1982, Instructor, M.S., Northern Illinois University
 Gary P. Buckley, 1981, Lecturer, M.S., University of Wisconsin-Stout
 James Buergermeister, 1978, Assistant Professor, M.S., University of Wisconsin-Madison
 James F. Burke, 1982, Assistant Professor and Program Director, M.S. Degree in Hospitality and Tourism, M.S., Utah State University
 Stuart R. Fullarton, 1978, Assistant Professor, M. Arch., Iowa State University of Science and Technology
 Sharon Giroux, 1984, Lecturer, B.S., Rochester Institute of Technology
 Jafar Jafari, 1973, Associate Professor, M.S., Cornell University
 Stephen Kissler, 1984, Lecturer, M.S., University of Wisconsin-Stout
 Larry Kohler, 1984, Visiting Business/Industry Professor, B.S., Michigan State University
 Philip H. McGuirk, 1979, Instructor, M.S., University of Wisconsin-Stout
 Charles J. Metelka, 1974, Professor, Ph.D., Northwestern University
 E. Gail Misfeldt, 1969, Assistant Professor, M.S., University of Tennessee
 Robert P. Olson, 1983, Assistant Professor, M.S., University of Minnesota
 Thomas P. Phillips, 1970, Program Director, B.S. Degree in Dietetics/Food Service Administration, M.S., The Pennsylvania State University
 Craig W. Schowalter, 1983, Lecturer, B.S., University of Minnesota
 Teresa M. Schulz, 1979, Lecturer and Program Director, Hotel and Restaurant Management, B.S., University of Wisconsin-Stout
 Lorin K. Toepper, 1984, Lecturer, M.S., University of Wisconsin-Stout
 Steven C. VandeBerg, 1972, Lecturer, M.S., University of Wisconsin-Stout

Dennis VanNorman, 1984, Lecturer, M.S., University of Minnesota
 William R. Way, 1976, Instructor, M.S., University of Wisconsin-Stout
 James A. Wendland, 1980, Lecturer, J.D., Marquette University
 Carol Wilson, 1984, Assistant Professor, Ph.D., University of Tennessee

Human Development, Family Living and Community Educational Services

Julie Backus, 1973, Lecturer, M.S., University of Wisconsin-Stout
 Gregory W. Brock, 1979, Associate Professor, Ph.D., The Pennsylvania State University
 Jeanette D. Coufal, 1979, Associate Professor, Ph.D., The Pennsylvania State University
 Judith A. Gifford, 1983, Lecturer, M.S., University of Wisconsin-Stout
 Sandra J. Gill, 1969, Associate Professor, Ed.D., Washington State University
 Bette A. Hanson, 1975, Professor, Ph.D., University of Illinois at Urbana-Champaign
 Judith Herr, 1969, Professor and Program Director, M.S. Degree in Home Economics Education, Ed.D., University of Minnesota
 Thomas B. Holman, 1980, Associate Professor and Program Director, B.S., Degree in Child Development/Family Life, Ph.D., Brigham Young University
 Priscilla D. Huffman, 1976, Professor and Program Director, B.S. Degree in Early Childhood Education, Ph.D., The Florida State University
 Judith A. Jax, 1966, Professor, Ph.D., University of Minnesota
 Eleanor M. Johnson, 1966, Assistant Professor, Ed.S., University of Wisconsin-Stout
 Janice M. Keil, 1969, Professor, Ph.D., Michigan State University
 Leslie A. Koepke, 1982, Assistant Professor and Program Director, B.S., Degree in Home Economics in Business, Ph.D., The Florida State University
 Yvonne Libby, 1983, Lecturer, B.S., University of Wisconsin-Stout
 Marian C. Marion, 1978, Associate Professor, Ph.D., The Ohio State University
 Gail C. Roberts, 1975, Professor, Ph.D., Purdue University
 J. Anthony Samenink, 1969, Professor and Dean, Ed.D., The Florida State University
 Denise A. Skinner, 1974, Associate Professor, Ph.D., University of Minnesota
 John M. Williams, 1976, Associate Professor, Ph.D., The Pennsylvania State University
 Karen Zimmerman, 1973, Professor, Ph.D., Iowa State University

School of Liberal Studies

Gerane T. Dougherty, 1980, Professor and Dean, Ph.D., Universite' Laval
 Carol A. Dobrunz, 1965, Professor and Assistant Dean, Ph.D., University of Oregon

Art

Gene Bloedorn, 1971, Associate Professor and Department Chair, M.F.A., University of Wisconsin-Madison
 Todd A. Boppel, 1963, Professor, M.F.A., University of Southern California
 Douglas A. Cumming, 1967, Associate Professor, M.F.A., Indiana University
 William De Hoff, 1984, Lecturer, M.Ed., and M.F.A., Temple University
 Paul E. DeLong, 1981, Lecturer, M.F.A., University of Wisconsin-Madison
 John Ewart, 1964, Lecturer, M.F.A., Cranbrook Academy of Art
 Orazio Fumagalli, 1964, Professor, Ph.D., State University of Iowa
 David A. Gamache, 1967, Assistant Professor, M.F.A., Tulane University
 Humphrey T. Gilbert, 1970, Assistant Professor, M.F.A., University of Wisconsin-Madison
 Mary F. Hovind, 1971, Specialist, B.S., University of Wisconsin-Stout
 Susan K. Hunt, 1978, Lecturer, M.F.A., Indiana University
 Sherman D. Iverson, 1967, Assistant Professor, M.F.A., Michigan State University
 Magdalena Laszkiewicz, 1983, Lecturer, Diploma, Ontario College of Art
 Dion R. Manriquez, 1967, Assistant Professor, M.F.A., The University of Iowa
 James A. McCormick, 1975, Professor, M.F.A., Cranbrook Academy of Art
 Harold C. Newton, 1973, Lecturer, Vogue-Ray School of Interior Design
 John A. Perri, 1966, Associate Professor, M.F.A., Alfred University
 Rob A. Price, 1970, Assistant Professor, M.F.A., Ohio University
 William Schulman, 1966, Associate Professor, M.S. University of Wisconsin-Milwaukee
 Claudia G. Smith, 1976, Assistant Professor, M.A., University of Minnesota
 Edward Stevens, 1983, Lecturer, B.I.D., University of Michigan
 Ronald H. Verdon, 1976, Assistant Professor and Program Director, B.S. Degree in Art and B.S. Degree in Art Education, M.F.A., Syracuse University
 Robb Wilson, 1960, Associate Professor, M.F.A., The Ohio State University
 Charles E. Wimmer, 1966, Associate Professor, M.F.A., University of Minnesota
 Eddie F. Wong, 1966, Associate Professor and Gallery Curator, M.F.A., The University of New Mexico

Biology

- George Nelson, 1966, Professor and Department Chair, M.S., Colorado State University
Oscar Carlson, 1968, Professor, Ph.D., Iowa State University
Donald A. Dickmann, 1961, Professor, Ph.D., South Dakota State University
Frances C. Garb, 1983, Lecturer, Ph.D., North Dakota State University
Phillip S. Gilliland, 1980, Lecturer, M.S., University of Wisconsin-Eau Claire
Russell F. James, 1968, Assistant Professor, Ph.D., University of Nebraska
Gene A. Olson, 1965, Professor, Ph.D., South Dakota State University
Peter Owen, 1984, Lecturer, Diplom Biologie, Free University of Berlin, Germany
Douglas A. Wikum, 1966, Professor, Ph.D., University of North Dakota
Richard Wilson, 1966, Associate Professor, Ph.D., Utah State University

Chemistry

- William J. Mueller, 1969, Professor and Department Chair, Ph.D., University of Idaho
Wendy Elcesser, 1984, Lecturer, M.S., The University of Michigan
Susan C. Nurrenbern, 1980, Associate Professor, Ph.D., Purdue University
Martin G. Ondrus, 1971, Professor, Ph.D., The University of Iowa
Mary Orfield, 1976, Lecturer, M.S., University of Wisconsin-Stout
Nelva G. Runnalls, 1966, Professor and Dean for Curriculum, Research and Graduate Studies, Ph.D., University of Missouri
Ambrose Schmelzle, 1984, Adjunct Professor, Ph.D., Indiana University
William D. Wagner, 1980, Lecturer, Ph.D., Montana State University
James Wold, 1984, Lecturer, B.A., Luther College
Gerald Zimmerman, 1973, Professor, Ph.D., Iowa State University

English

- Robert T. Moran, 1971, Associate Professor and Department Chair, M.A., University of Wisconsin-Madison
Raoul Barlow, 1969, Associate Professor, M.A., Marquette University
Sue B. Beckham, 1969, Assistant Professor, Ph.D., University of Minnesota
James Brummer, 1981, Lecturer, Ph.D., Boston University
Gerane T. Dougherty, 1980, Professor and Dean, Ph.D., Université Laval
Carole Flint, 1976, Assistant Professor, M.A., University of Wisconsin-Eau Claire
Howard E. Foreman, 1975, Instructor, M.A., Colorado State University
Richard M. Gardner, Jr., 1970, Assistant Professor, M.A., University of Iowa

- Sylvia A. Gengenbach, 1981, Lecturer, M.A., University of Wisconsin-Eau Claire
Evelyn G. Jenson, 1976, Lecturer, Ph.D., Ball State University
Richard Kuss, 1984, Lecturer, M.A.T., University of Wisconsin-River Falls
Geraldine Laine, 1968, Instructor, M.A., University of Detroit
Warren P. Lang, 1969, Associate Professor, Ph.D., Indiana University
Marvin G. Larson, 1968, Instructor, M.A., University of Wisconsin-Madison
Michael M. Levy, 1980, Lecturer, Ph.D., University of Minnesota
David McCordick, 1969, Professor, Ph.D., University of Wisconsin-Madison
Patricia McManamy, 1970, Instructor, M.S., University of Wisconsin-Madison
John Medelman, 1969, Assistant Professor, B.A., B.S., University of Minnesota
Robert C. Meier, 1968, Assistant Professor, A.B., Brown University
William F. O'Neill, 1980, Lecturer, M.A., University of Minnesota
Janet Polansky, 1973, Associate Professor, Ph.D., Tulane University
Helen Quinn, 1978, Lecturer, M.A., University of Wisconsin-River Falls
Mary Jo Rathke, 1959, Associate Professor, M.A., University of Wisconsin-Madison
Melanie Richards, 1980, Lecturer, M.F.A., Goddard
Daniel G. Riordan, 1970, Professor, Ph.D., The University of North Carolina
Robert J. Schuler, 1978, Assistant Professor, M.A., University of California at Berkeley
Emmanuel Teye, 1984, Lecturer, M.Ed., University of Manitoba
Erik Thurin, 1968, Professor, Ph.D., University of Minnesota
Susan M. Thurin, 1968, Associate Professor, Ph.D., University of Wisconsin-Milwaukee
Virginia L. Wolf, 1977, Professor, Ph.D., The University of Kansas

Mathematics

- John R. Hunt, 1970, Associate Professor and Department Chair, D.A., University of Northern Colorado
Fred C. Breisch, 1966, Associate Professor, A.M., University of Michigan
Richard Cutts, 1982, Lecturer, A.M., University of Illinois
Marian J. Ellison, 1979, Lecturer, M.S.T., University of Wisconsin-Eau Claire
Frederic Floodstrand, 1984, Lecturer, Ph.D., New Mexico State University
Clifford Gauthier, 1963, Associate Professor, M.S., Bemidji State College

- Earl W. Gierke, 1962, Professor and Assistant Vice Chancellor, Ph.D., University of Minnesota
Nasser Hadidi, 1979, Professor, Ph.D., Virginia Polytechnic Institute and State University
Katherine Hawker, 1984, Lecturer, B.A., Calvin College
Frank W. Hebl, 1970, Instructor, M.Ed., The Pennsylvania State University
Orien Howard, 1983, Lecturer, M.A., Wayne State University
Donald E. Johnson, 1982, Lecturer, Ph.D., Michigan State University
Bruce W. Johnston, 1983, Assistant Professor, Ph.D., University of Wyoming
Deborah Kruschwitz, 1983, Lecturer, M.S., Mankato State University
James P. Ley, 1967, Assistant Professor, M.S., University of Missouri at Rolla
Eino E. Maki, 1963, Associate Professor and Program Director, B.S. Degree in Applied Mathematics, M.S., University of Wisconsin-Madison
William McGuire, 1982, Assistant Professor, D.A., University of Northern Colorado
Dennis J. Mikkelsen, 1980, Assistant Professor, Ph.D., University of Wisconsin-Milwaukee
Ruth L. Mikkelsen, 1982, Assistant Professor, Ph.D., University of Wisconsin-Milwaukee
Richard H. Miller, 1964, Professor, Ed.D., University of South Dakota
John C. Neuenfeldt, 1968, Associate Professor, Ed.D., New Mexico State University
Loretta J. Robb Thielman, 1983, Assistant Professor, Ph.D., Oregon State University
Peter Thielman, 1984, Lecturer, M.S., Oregon State University
Karen L. Williams, 1982, Lecturer, B.S., University of Wisconsin-Eau Claire
Eileen M. Zito, 1974, Instructor, M.A., University of Illinois

Music

- Dennis J. Siebenaler, 1980, Assistant Professor and Department Chair, M.M., University of Wisconsin-Madison
Roger L. Anderson, 1980, Lecturer, M.A., University of Wisconsin-Eau Claire
Marie Bolstad, 1976, Lecturer, B.A., St. Olaf College
Patrick M. Liebergen, 1978, Associate Professor, D.Mus.A., University of Colorado
Ervin Schlick, 1984, Lecturer, M.S., Mankato State University

Physical Education and Athletics

- Warren C. Bowlus, 1981, Professor, Director and Department Chair, P.E.D., Indiana University
William Andrist, 1984, Lecturer, M.S., University of Wisconsin-Stout

William P. Burns, 1971, Associate Professor, M.S., University of Wisconsin-Madison

Kay I. Carter, 1966, Assistant Professor, M.S., Wisconsin State University-Lacrosse

Robert J. Kamish, 1968, Instructor, M.S., Stout State University

John J. Miller, 1983, Lecturer, M.S., University of Minnesota

Dwain P. Mintz, 1962, Professor, Ed.D., Utah State University

Walter Perkins, 1983, Lecturer, B.S., University of Wisconsin-River Falls

Terry F. Pettie, 1970, Instructor, M.S., Mankato State College

Stennet B. Pierce, 1965, Assistant Professor, M.S., University of Wisconsin-Lacrosse

Michael Rammacker, 1984, Lecturer, M.S., University of Arizona

Victoria L. Rees, 1983, Lecturer, B.S., Central Methodist College

Donna G. Roe, 1977, Lecturer, M.S., Wisconsin State University-Lacrosse

Rita E. Shinden, 1971, Instructor, M.S., Mankato State College

Robert D. Smith, 1968, Instructor, M.S., Wisconsin State University-Lacrosse

Steven P. Terry, 1980, Lecturer, M.S., Ball State University

John Zuerlein, 1966, Associate Professor, M.S., Stout State University

Physics

Steven P. Fossum, 1966, Professor and Department Chair, Ph.D., University of Wisconsin-Madison

Douglas Carlson, 1983, Lecturer, M.S., New Mexico Institute of Mining and Technology

John J. Farris, 1968, Professor, Ph.D., University of Washington

Robert J. Foley, 1977, Instructor, M.S., University of Wisconsin-Madison

Allan D. Hilgendorf, 1968, Associate Professor, M.N.S., University of South Dakota

Mark E. Larchez, 1970, Associate Professor, Ph.D., Texas A & M University

James A. Pejisa, 1976, Instructor, M.S., University of Wisconsin-Stout

John T. Rompala, 1981, Lecturer, Ph.D., Clemson University

Social Science

Robert E. Evans, 1974, Assistant Professor and Department Chair, M.A., University of Montana

Javed Ashraf, 1984, Assistant Professor, M.A., Boston University

William F. Bailey, Jr., 1966, Associate Professor, M.A., University of Minnesota

Beatrice A. Bigony, 1974, Associate Professor, Ph.D., University of Michigan

John W. Clark, 1970, Associate Professor, Ph.D., University of Nebraska

James Eggert, 1968, Associate Professor, M.A., Michigan State University

Peder W. Hamm, 1977, Instructor, M.A., Northern Illinois University

Kenneth Kajser, 1969, Instructor, M.A., University of Minnesota

Frank S. Kennett, 1978, Lecturer, M.A., Tulane University

David W. P. Liu, 1964, Professor, Ph.D., University of Minnesota

Ronald Lord, 1983, Lecturer, M.A., University of Wisconsin-Madison

Dayle A. Mandelson, 1976, Assistant Professor, M.A., Syracuse University

Robert Melrose, 1958, Associate Professor, M.A., University of Minnesota

Sharon A. Nero, 1979, Lecturer, M.A., Minnesota

Sharon A. Nero, 1979, Lecturer, M.A., University of Illinois-Chicago Circle

Thomas R. Nimmaman, 1970, Professor, Ph.D., The University of Wyoming

Arnold E. Olson, 1964, Associate Professor, M.S., Stout State University

Bruce Pamperin, 1983, Assistant Professor, Ph.D., University of Wisconsin-Madison

Diana M. Petersdorf, 1982, Lecturer, M.A., University of Nevada

Lydia Rutkowski, 1966, Associate Professor, M.S., University of Illinois

Stephen A. Snyder, 1970, Associate Professor, Ph.D., University of Minnesota

Louis Tokle, 1965, Associate Professor, M.B.A., University of Denver

Richard J. Tyson, 1976, Assistant Professor, M.A., Syracuse University

Speech and Foreign Language

Raymond Hayes, 1977, Instructor and Department Chair, M.A., Ball State University

Natalie K. Bothwell, 1977, Lecturer, M.A., Kansas State University

Noel J. Falkofsky, 1962, Associate Professor, M.A., Kent State University

Dennis R. Griffiths, 1972, Instructor, M.A., University of Connecticut

Howard S. Heise, 1967, Assistant Professor, M.A., State University of South Dakota

Arthur Mathews, 1969, Associate Professor, M.A., State University of Iowa

Gerald Myers, 1969, Assistant Professor, Ph.L., St. Louis University

Michael T. Nicolai, 1974, Assistant Professor, M.A., University of New Mexico

Lorelei Schroeder, 1978, Lecturer, M.S., Northern Illinois University

Martha Wallen, 1972, Associate Professor, Ph.D., University of Wisconsin-Madison

School of Education and Human Services

David A. Sabatino, 1982, Professor and Dean, Ph.D., The Ohio State University

Donald J. Stephenson, 1970, Professor and Associate Dean, Ed.D., University of Missouri

Harlyn Misfeldt, 1965, Associate Professor and Director of the Office of Teacher Education, Ed.S., Stout State University

Robert A. Sedlak, 1983, Professor and Director, Center for Research and Service, Ph.D., The Pennsylvania State University

Stanley Karcz, 1984, Associate Professor and Director, Center of Correctional Education, Ed.D., Syracuse University

Counseling/Psychological Services

Carlyle W. Gilbertson, 1969, Professor and Program Director, Ed.S., Degree in Guidance and Counseling and Department Chair, Ph.D., University of Wisconsin-Madison

Charles P. Barnard, 1972, Professor and Program Director, M.S., Degree, Marriage and Family Therapy, Ed.D., University of Wyoming

David R. Cook, 1975, Professor, Ed.D., Indiana University

Gerald F. Davis, 1970, Professor and Program Director, M.S., Degree in Guidance and Counseling, Ed.D., United States International University

John C. Deutscher, 1966, Professor, Ed.D., University of North Dakota

Gust Jensen, 1965, Professor, Ph.D., University of Minnesota

Lee Morical, 1975, Director, M.S., University of Wisconsin-Stout

David A. Sabatino, 1982, Professor and Dean, Ph.D., The Ohio State University

John B. Stevenson, 1966, Professor and Director of International Programs, Ph.D., the Ohio State University

Calvin L. Stoudt, 1970, Professor and Program Director, M.S., Degree in Education-School Psychology, Ph.D., University of Wisconsin-Madison

P. Robert Wurtz, 1965, Professor, Ph.D., University of Wyoming

Education

Virginia Peter, 1972, Professor and Department Chair, Ph.D., University of Colorado

Wesley L. Face, 1957, Professor and Vice Chancellor, Ed.D., University of Illinois

Eugene R. F. Flug, 1962, Professor, Ph.D., University of Minnesota

Carol Hogstad, 1969, Associate Professor, M.S., University of Wisconsin-Stout

Mary Hopkins-Best, 1976, Assistant Professor and Director, Certification Program, Special Education, Ed.D., Virginia Polytechnic Institute & State University

Stan Karcz, 1984, Visiting Associate Professor and Director of Corrections Education, Ed.D., Syracuse University

Harlyn Misfeldt, 1965, Associate Professor, Ed.S., University of Wisconsin-Stout

Dan Paulson, 1983, Visiting Assistant Professor, Ed.D., The University of Florida

Robert Sedlak, 1983, Professor, Ph.D., Pennsylvania State University

Jill Stanton, 1978, Lecturer, M.E.-P.D., University of Wisconsin-Stout

Robert S. Swanson, 1950, Professor and Chancellor, Ph.D., University of Minnesota

John Van Osedale, 1968, Associate Professor and Director of Continuing Education and Director of the Summer Session, M.S., Bradley University

Margaret Wiinamaki, 1973, Assistant Professor, Ed.S., University of Wisconsin-Stout

Stout Vocational Rehabilitation Institute

Paul R. Hoffman, 1964, Professor, Executive Director, Ed.D., University of Arizona

Christopher A. Smith, 1983, Specialist, Special Assistant to Executive Director, M.S., DePaul University

Anthony J. Langton, 1970, Assistant Professor, Undergraduate Program Director and Director, Rehabilitation Engineering Center, M.S., University of Wisconsin-Stout

Daniel C. McAlees, 1976, Professor, Director, Research and Training Center, Ph.D., Michigan State University

Walter A. Pruitt, 1968, Professor, Director, Center for Rehabilitation Education, Ed.D., University of Northern Colorado

John S. Wesolek, 1969, Assistant Professor, Director, Vocational Development Center, Ph.D., University of Northern Colorado

Ronald R. Fry, 1970, Instructor, Assistant Director, Materials Development Center, M.A., University of Wisconsin-Stout

Shirley K. Stewart, 1974, Assistant Professor, Assistant Director, Vocational Development Center, M.S., University of Wisconsin-Stout

Darrell D. Coffey, 1967, Professor, Director of Training, Research and Training Center, Ed.D., Auburn University

Charles C. Coker, 1975, Director of Research, Research and Training Center, Ph.D., Bowling Green State University

Garld A. Kaiser, 1975, Specialist, Manager of Evaluation Services, Vocational Development Center, M.S., University of Wisconsin-Stout

Thomas A. Modahl, 1973, Professor, Graduate Program Director, Ed.D., University of Northern Colorado

Sue A. Schmitt, 1976, Assistant Professor, Manager, Program for Independent Living, VDC, Ed.D., Mississippi State University

David L. Swan, 1981, Specialist, Manager, Projects with Industry, Vocational Development Center, M.S., University of Wisconsin-Stout

Jeffrey A. Annis, 1975, Specialist, M.S., University of Wisconsin-Stout

Thomas F. Blakemore, 1980, Specialist, Ph.D., University of Northern Illinois

James E. Bordieri, 1984, Specialist, Ph.D., Illinois Institute of Technology

Karl F. Botterbusch, 1972, Associate Professor, Ph.D., George Washington University

David W. Corthell, 1972, Professor, Ed.D., University of Northern Colorado

James J. Costello, 1984, Specialist, M.S., University of Wisconsin-Stout

Thomas Czerlinsky, 1979, Specialist, Ph.D., University of Virginia

Howard S. Feldman, 1974, Associate Professor, Ed.D., Boston University

Maxine Follstad, 1985, Specialist, M.S., University of Illinois

Carol L. Hartman, 1984, Lecturer

Karen A. Hodgson, 1976, Specialist, M.S., University of Wisconsin-Stout

Brian M. Husby, 1984, Specialist, B.S., University of Wisconsin-Stout

Cynthia E. Husby, 1980, Specialist, M.S., University of Wisconsin-Stout

William F. Johnson, 1974, Specialist, M.S., University of Wisconsin-Stout

Jerry M. Jorgenson, 1979, Specialist, M.S., University of Wisconsin-Stout

Jerome J. Kirsling, 1971, Assistant Professor, M.S., University of Wisconsin-Stout

Bonnie A. Mayes, 1984, Head Resident, B.S., University of Wisconsin-Stout

Paul M. McCray, 1978, Specialist, M.S., University of Arizona

Frederick E. Menz, 1973, Professor, Ph.D., University of Illinois

Allen J. Noll, 1977, Specialist, Ed.S., University of Wisconsin-Stout

Eugene F. Pichette, 1984, Specialist, M.S., University of Wisconsin-Stout

Margaret K. Russett, 1977, Lecturer, M.S., University of Wisconsin-Stout

Arnold B. Sax, 1969, Professor, Ed.D., University of Houston

John D. See, 1972, Associate Professor, Ph.D., University of Iowa

Scott Segner, 1985, Specialist, B.S., University of Wisconsin-Stout

Jo H. Soeldner, 1985, Specialist, B.S., University of Wisconsin-Stout

Randy K. Sommerfeld, 1984, Specialist, M.S., University of Wisconsin-Stout

Dale F. Thomas, 1983, Specialist, Ph.D., Marquette University

Ann L. Wagner, 1983, Specialist, B.S., University of Wisconsin-Stout

Avis A. Wolske Baker, 1985, Lecturer, M.S., University of Wisconsin-Stout

Learning Resources

David P. Barnard, 1946, Professor and Dean, Ed.D., Indiana University

Media Technology

David L. Graf, 1980, Associate Professor and Program Director, M.S. Degree in Media Technology and Department Chair, Ed.D., The University of Nebraska-Lincoln

David P. Barnard, 1946, Professor and Dean, Ed.D., Indiana University

Roger L. Hartz, 1972, Assistant Professor, Ed.D., Western Michigan University

Terrance R. Ingram, 1970, Professor, Ph.D., Miami University

Robert L. Ward, 1967, Assistant Professor, M.S., Stout State University

Library Learning Center

John J. Jax, 1959, Associate Professor and Assistant Dean; Director, Library Learning Center, C.A.S., University of Illinois-Urbana

Brooke Anson, 1969, Assistant Professor, M.S., University of Illinois

Mary Donley, 1959, Associate Professor, M.A., University of Minnesota

Denise A. Madland, 1979, Instructor, M.S., University of Illinois

Gayle J. Martinson, 1980, Specialist, M.A., University of Wisconsin-Madison

Dennis Olson, 1984, Instructor, M.S., University of Wisconsin-Madison

Mary K. Richards, 1980, Assistant Professor, M.A., University of Wisconsin-Milwaukee

Philip Q. Sawin, 1975, Assistant Professor, M.A., University of Wisconsin-Madison

Philip J. Schwarz, 1967, Associate Professor, M.A., University of Denver

Jana Steidinger, 1982, Instructor, M.A., University of Minnesota

Brenda Swannack, 1977, Specialist, M.S., University of Wisconsin-Stout

Kristi Tornquist, 1984, Specialist, M.S., University of Wisconsin-Madison

Van Houlson, 1984, Instructor, M.S., University of Iowa

Instructional Technology Services

Harry A. Herbert, 1965, Professor and Assistant Dean; Director, Instructional Technology Services, Ed.D., Indiana University

Joseph G. Hagaman, 1972, Professor, Ph.D., Michigan State University

Margaret E. Ingram, 1976, Specialist, M.S., University of Wisconsin-Stout

John J. Lauson, 1978, Specialist, Ed.S., University of Wisconsin-Stout

Dale W. Mallory, 1970, Specialist

Martin S. Springer, 1978, Specialist, M.S., University of Wisconsin-Stout

Teleproduction Center

Rosemary Jacobson, 1977, Specialist and Director, Teleproduction Center, M.S., University of Wisconsin-Stout

Richard Dodge, 1984, Specialist, B.S., University of Wisconsin-Stout

James Guenther, 1984, Specialist, B.S., University of Wisconsin-Stout

<p>Maxim Herbach, 1974, Assistant Professor and Specialist, M.A., University of Wisconsin-Madison</p> <p>Edmund Jakober, 1980, Specialist, B.S., University of Wisconsin-Stout</p> <p>Arthur G. Juchno, 1978, Specialist, B.A., Canisius College</p>	<p>David H. Kaun, 1975, Specialist, B.S., University of Wisconsin-Stout</p> <p>Annette L. Proehl, 1981, Specialist, B.S., University of Wisconsin Eau-Claire</p> <p>Academic Computer Services</p> <p>Gordon G. Jones, 1965, Professor and Director, Academic Computer</p>	<p>Services, Ph.D., Washington State University</p> <p>Rodney D. Haut, 1984, Specialist, B.S., University of Wisconsin-Whitewater</p>
<p>Student Services Division</p>		
<p>Samuel E. Wood, 1964, Professor, Assistant Chancellor and Dean of Students, M.A., University of Iowa</p> <p>Counseling Services</p> <p>Richard E. Anderson, 1967, Professor and Dean of Counseling Services, Ed.D., Colorado State College</p> <p>Patsy R. Barnes, 1983, Program Coordinator, M.S.Ed., University of Wisconsin-Platteville</p> <p>Gayle M. Bock, 1982, Specialist</p> <p>Barbara A. Burdick, 1980, Assistant to Director, B.A., Metropolitan State University, Minneapolis-St. Paul</p> <p>Robert E. Dahlke, 1969, Assistant Professor and Director, Career Planning and Placement, M.S., Stout State University</p> <p>Kenneth J. Erickson, 1961, Assistant Professor and Assistant Director of Career Planning and Placement, M.A., University of Minnesota</p> <p>Patricia K. Freer, 1982, Specialist, B.S., University of Wisconsin-Stout</p> <p>Celene Frey, 1981, Counselor/Advisor, B.S., University of Wisconsin-Stout</p> <p>R. Pinckney Hall, 1969, Professor and Counselor, Ph.D., Northwestern University</p> <p>Robert L. Hoyt, 1967, Professor and Counselor, Ph.D., Northwestern University</p> <p>Diane Iverson, 1984, Specialist/Director: ASPIRE, M.S., University of Wisconsin-Stout</p> <p>Cynthia S. Jenkins, 1977, Assistant Director of School Relations, M.S., University of Wisconsin-Stout</p> <p>Charles Kell, 1969, Assistant Professor and Director of School Relations, Ed.S., University of Wisconsin-Stout</p> <p>Christy Lendman, 1984, Specialist, B.S., Southern Illinois University at Carbondale</p> <p>Richard D. Lowery, 1968, Instructor and Assistant Director of Admissions, M.S.Ed., Southern Illinois University</p> <p>David B. McNaughton, 1966, Professor and Director of Counseling Center, Ph.D., University of Wyoming</p> <p>Donald E. Osegard, 1962, Associate Professor and Director of Admissions, M.S., Stout State University</p> <p>Mary A. L. Riordan, 1980, Specialist/Director of Academic Skills Center, B.A., College of St. Catherine</p> <p>Raymond A. Rivera, 1981, Program Coordinator, B.S., Mount Senario College</p>	<p>Sue U. Stephenson, 1970, Assistant Professor and Counselor, M.S., Indiana State Teachers College</p> <p>Ruth Thomas, 1972, Counselor/Advisor, Career Planning and Placement, M.S., Stout State University</p> <p>Judy Tomesh, 1984, Counselor, M.S., University of Wisconsin-River Falls</p> <p>Linda A. Torres, 1979, Director of Ethnic Services Center, B.S., Stout State University</p> <p>Karin M. Worthley, 1981, Specialist, B.A., St. Olaf College</p> <p>Ann M. Yurcisin, 1978, Program Coordinator of Services for Disabled Students, Ed.S., University of Wisconsin-Stout</p> <p>Student Services</p> <p>Joseph M. Larkin, 1966, Professor and Associate Dean of Students, Ed.D., Oklahoma State University</p> <p>Christine Enger, 1984, Counselor/Advisor, B.S., University of Wisconsin-Stout</p> <p>Joan S. Hughes, 1963, Director of Student Records</p> <p>Kurtis Kindschi, 1981, Director of Financial Aid, M.S., Wisconsin State University-Platteville</p> <p>Ann Langmack, 1984, Specialist, B.S., University of Wisconsin-Eau Claire</p> <p>Nancy Ninas, 1984, Counselor/Advisor, B.S., University of Wisconsin-Stout</p> <p>Beth Resech, 1980, Counselor/Advisor, B.S., B.A., University of Wisconsin-Stout</p> <p>Sharon L. Stewart, 1969, Registrar, B.A., Northland College</p> <p>Lois H. Von Berg, 1969, Assistant Professor and Director of Health Services, M.A., Colorado State College</p> <p>Auxiliary Services</p> <p>Helmuth Albrecht, 1963, Executive Director of Auxiliary Services, B.S., Stout State College</p> <p>Tobin Brown, 1983, Head Resident, B.S., Eastern Illinois University</p> <p>Joseph R. Brown, 1970, Assistant to Executive Director of Auxiliary Services, B.A., Stout State University</p> <p>Robert Christoffel, 1984, Head Resident, B.S., University of Wisconsin-Stevens Point</p> <p>Martin Fritz, 1981, Head Resident, B.S., Emporia Kansas State College</p> <p>Robin M. Grossbier, 1983, Head Resident, B.A., University of Wisconsin-Whitewater</p>	<p>Leo Johnson, 1983, Head Resident, M.S., University of Wisconsin-LaCrosse</p> <p>Allen Klink, 1966, Assistant Professor, M.S., Wisconsin State College at LaCrosse</p> <p>Elizabeth Klotz, 1984, Head Resident, B.S., University of Wisconsin-Stout</p> <p>Karen M. Nistler, 1983, Head Resident, B.A., University of Wisconsin-Stevens Point</p> <p>Anne Ramage, 1971, Instructor and Assistant Director of Residence Halls, M.A., St. Louis University</p> <p>Kathryn Schuld, 1984, Head Resident, M.S., University of Wisconsin-Stout</p> <p>Debra J. Shefchik, 1980, Head Resident, M.S., University of Wisconsin-Stout</p> <p>Judy E. Spain, 1967, Assistant Professor and Director of Residence Halls, M.A. in Ed., State College of Iowa</p> <p>Robert A. Johnson, 1969, Instructor and Director of Memorial Student Center, M.S., Stout State University</p> <p>Joseph L. Krier, 1976, Specialist, B.S., Wisconsin State University-LaCrosse</p> <p>William J. Porter, 1980, Specialist, B.A., University of Wisconsin-Madison</p> <p>Robert W. Siedlecki, 1970, Assistant Director of Memorial Student Center-Activities, B.A., University of Wisconsin-Eau Claire</p> <p>Anne Spang, 1984, Specialist, B.S., University of Wisconsin-LaCrosse</p> <p>Therese Stellick, 1984, Specialist, B.S., University of Wisconsin-LaCrosse</p> <p>Harold R. Aubert, 1983, Director of Residential Dining Services, B.S., University of Montana</p>

Administrative Services Division

Wesley S. Sommers, 1956, Professor and Assistant Chancellor, Ph.D., University of Minnesota
James W. Freer, 1974, Deputy Assistant Chancellor and Controller, M.B.A., University of Wisconsin-Oshkosh
Annette M. Taylor, 1980, Assistant to Assistant Chancellor, B.S., University of Wisconsin-Stout

Glen R. Schuknecht, 1970, Associate Professor, Director of Management Information Systems, M.S., University of Wisconsin-Madison
Robert F. Kissinger, 1977, Director of Administrative Computing, M.S., State University of New York at Binghamton

Daniel Newhall, 1978, Director of Physical Plant, B.S., University of Wisconsin-Madison
J. Wayne Argo, 1985, Director of Personnel, B.A., University of Missouri-St. Louis
Garold L. Buckley, 1966, Director of Protective Services

Emeriti

Dr. Dwight Agnew, Dean Emeritus, Professor Emeritus, 1977
Dr. Herbert A. Anderson, Dean Emeritus, Professor Emeritus, 1980
Mrs. E. Anderson, Professor Emeritus, 1964
Dr. Orlin Anderson, Professor Emeritus, 1980
Mr. Herman Arneson, Associate Professor Emeritus, 1976
Mr. Frank Belisle, Professor Emeritus, 1970
Miss Phyllis Bentley, Associate Professor Emeritus, 1970
Mrs. Caroline Bosworth, Faculty Emeritus, 1975
Dr. Lois Byrns, Professor Emeritus, 1977
Miss Gertrude L. Callahan, Professor Emeritus, 1961
Dr. Robert Cameron, Professor Emeritus, 1977
Miss Clara Carrison, Associate Professor Emeritus, 1975
Mr. Dwight Chinnock, Professor Emeritus, 1969
Dr. Donald Clausen, Professor Emeritus, 1980
Miss Mary Frances Cutnaw, Associate Professor Emeritus, 1974
Mr. Edwin W. Dyas, Associate Professor Emeritus, 1980
Mr. Paul Edmondson, Assistant Professor Emeritus, 1985
Dr. John Furlong, Professor Emeritus, Assistant to the Chancellor Emeritus, 1985
Mr. Edward Gold, Associate Professor Emeritus, 1983
Mr. Myron Harbour, Associate Professor Emeritus, 1975
Miss Margaret Harper, Associate Professor Emeritus, 1970
Mr. Leonard Helgeson, Instructor, Emeritus, 1980
Dr. Marybelle Hickner, Professor Emeritus, 1984
Mr. Richard Hoffman, Instructor Emeritus, 1985
Dr. Veryl Homuth, Associate Professor Emeritus, 1985
Dr. John Houle, Professor Emeritus, 1985
Dr. Ralph Iverson, Assistant Chancellor Emeritus, Professor Emeritus, 1973
Miss Lillian Jeter, Professor Emeritus, 1961
Mr. Ray C. Johnson, Professor Emeritus, 1969

Miss Mary Killian, Professor Emeritus, 1967
Dr. Alice J. Kirk, Professor Emeritus, 1963
Mr. Dick G. Klatt, Associate Professor Emeritus, 1978
Mr. Ray Kranzusch, Professor Emeritus, 1964
Dr. Lorna Lengfeld, Professor Emeritus, 1973
Dr. Edward Lowry, Professor Emeritus, 1983
Dr. Daniel Magnussen, Professor Emeritus, 1985
Miss Ella Jane Meiller, Professor Emeritus, 1973
Dr. William J. Micheels, Chancellor Emeritus and Distinguished Professor Emeritus, 1977
Mr. Edward Morical, Associate Professor Emeritus, 1985
Dr. Otto Nitz, Professor Emeritus, 1971
Miss Ann Noble, Professor Emeritus, 1962
Dr. Erich Oetting, Dean Emeritus, Professor Emeritus, 1969
Mr. K. T. Olsen, Associate Professor Emeritus, 1974
Mr. Harry B. Olstad, Associate Professor Emeritus, 1980
Ms. Charlotte Orazem, Assistant Professor Emeritus, 1980
Dr. William H. Owen, Professor Emeritus, 1982
Dr. Cecelia Pudelkewicz, Professor Emeritus, 1981
Mr. Matthew Reneson, Assistant Professor Emeritus, 1982
Dr. Jane C. Rosenthal Reynolds, Professor Emeritus, 1983
Dr. Evelyn G. Rimel, Professor Emeritus, 1979
Ms. Charlotte L. Rose, Associate Professor Emeritus, 1980
Dr. E. Robert Rudiger, Professor Emeritus, 1982
Dr. Philip W. Ruehl, Professor Emeritus, 1982
Mr. John Sabol, Associate Professor Emeritus, 1976
Mr. Morrell Solem, Assistant Professor Emeritus, 1984
Dr. Charles Thomas, Professor Emeritus, 1985
Dr. Mildred Turney, Professor Emeritus, 1975

Miss Hazel Van Ness, Professor Emeritus, 1968
Dr. Helen Van Zante, Professor Emeritus, 1975
Mrs. Alyce Vanek, Associate Professor, Emeritus, 1974
Ms. Betty Viens, Assistant Professor Emeritus, 1984
Mr. Lloyd Whydotski, Associate Professor Emeritus, 1975
Mrs. Myrtis L. Whydotski, Instructor Emeritus, 1982
Dr. Theodore E. Wiehe, Professor Emeritus, 1982
Miss Mary K. Williams, Professor Emeritus, 1970
Mrs. Freda M. Wright, Associate Professor Emeritus, 1978
Dr. Norman C. Ziemann, Professor Emeritus, 1979

INDEX

Academic Skills Center 11
 Accreditation 1
 Add/Drop Policy 8
 Admission 4
 Adult Special Students 5
 Aging Family 61
 American College in London 6
 Anthropology 82
 Applied Mathematics 44, 88
 Applied Technology 13
 Art 46, 61, 82
 Art Education 50
 Athletics 12
 Aviation/Aerospace 61

Biology 61, 84
 Business Administration 61, 68
 Business and Industry Internships 5

Certification Programs 61
 Chancellor's Award 9
 Chemistry 61, 84
 Child Development and Family Life 26
 Clothing, Textiles and Design 29, 75
 Coaching Certification 61
 Community 3
 Computer Science 61
 Continuing Education 6
 Cooperative Education Program 5
 Counseling Center 11
 Counseling and Personnel Services 94
 Course Description 63
 Craftsmanship 57
 Credit by Examination 6

Dietetics 30
 Dual Enrollment 6

Early Childhood Education 32
 Economics 61, 85
 Education 94
 Emeriti 100
 Energy 63
 English 61, 86
 Ethnic Services Center 11

Faculty 3
 Faculty and Academic Staff 100
 Facilities 3
 Falsification of Records 4
 Fashion Merchandising 34
 Field Experience Program 5
 Financial Aid 9
 Financial Information 7
 Food Science and Nutrition 77
 Food Service Administration 35
 Food Technology 62
 French 87
 Futures Studies 60

General Business Administration 17
 Geography 87
 Graduation Requirements 8

Graduation with Honors 9
 Graduate College 6
 Graphic Communications 65

Habitational Resources 79
 Handbook 12
 History 62, 87
 Home Economics in Business 37
 Home Economics Education 39, 78
 Home Economics General 41
 Hotel and Restaurant Management 42
 Housing 7
 Human Development and Family Living 74

Independent Studies Program 6
 Industrial Management 67
 Industrial Teacher Education 71
 Industrial Technology 19
 Industrial Training 73
 Industrial Work Experience 5
 Industry and Technology 63
 International Students 5
 Inventing 58

Journalism 62, 86

Learning Resources 99
 Liberal Studies 44, 82

Marketing and Distributive Education 21, 72
 Materials and Processes 70
 Mathematics 62, 88
 Media Technology 99
 Minnesota Students 7
 Minors 61
 Mission 3
 Music 89

Orientation 11
 Overload Policy 8

Philosophy 90
 Physical Education 90
 Physics 62, 91
 Pigeon Lake 6
 Placement Services 11
 Political Science 92
 Probation 8
 Professional Teacher Education 9
 Project ASPIRE 11
 Property Management 62
 Psychology 51, 62, 96

Refunds 7

Scholastic Standards 8
 Senior Citizens 4
 Social Work 92
 Sociology 62, 92
 Spanish 87
 Special Programs 5

Special Education 95
 Specializations 57
 Speech 62, 93
 Students 3
 Student Activities 11
 Student Center 11
 Student Services 11
 Students with Disabilities 11
 Summer Session 6
 Suspension 8

Teacher Certification 9
 Technical Education 23
 Technical Writing 62
 Technology Education 24
 Tourism 62
 Traffic Safety 62
 Training and Human Resource Development 59
 Transdisciplinary 98
 Transfer Policy 4
 Transportation 63

Veterans 5
 Veterans Service 11
 Vocational Certification 25
 Vocational Education 25, 73
 Vocational Rehabilitation 53, 95

Withdrawal Procedure 8
 Women's Studies 62